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THE

PHILADELPHIA

MEDICAL MUSEUM,

CONDUCTED

BY

JOHN REDMAN COXE, M. D.

VOL. III.

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TO

BENJAMIN RUSH, M. D.

PROFESSOR OF THE INSTITUTES OF MEDICINE,

&c. &c. &c.

IN THE

UNIVERSITY OF PENNSYLVANIA.

DEAR SIR,

THE many favors you have conferred upon me, impel me to dedicate to you, this third volume of the PHILADELPHIA MEDICAL MUSEUM; which is rendered still more proper, from the encouragement you have afforded me, in the progress of the work. I request you therefore, to accept it, as a small testimony of my regard, which, although it cannot add to your well established celebrity, will, nevertheless, enable me thus publickly to assure you, how greatly I respect your talents.

I am, Dear Sir,
Very respectfully,
Your obliged Friend
And very obedient Servant,

JOHN REDMAN COXE.

PHILADELPHIA,
January 1st. 1807.

49435

THE completion of the Third Volume of the Philadelphia Medical Muſeum, neceſſarily reminds the editor of the numerous obligations he is under, to the patrons of the work: it would therefore, ill become him, to ſuffer the opportunity to paſs, without returning his warmeſt thanks to thoſe who have ſo cordially aided him in the undertaking. The conſciouſneſs of having endeavoured to render it beneficial to his readers, ſufficiently recompenſes him for the trouble neceſſarily attending it;—and, whilſt he may with great truth, congratulate them on the increaſing merits of the medical profeſſion throughout America; he earneſtly ſolicits that continuance of their favors, which only, can render a work of the preſent kind, extenſively uſeful.

PHILADELPHIA,
January 1ſt, 1807.

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MEDICAL MUSEUM.

Vol. III.....No. I.

An Inquiry into the Functions of the Spleen, Liver, Pancreas, and Thyroid gland. By Benjamin Rush, M. D. *Professor of the Institutes and Practice of Medicine in the University of Pennsylvania.*

Of the Function of the Spleen.

FOUR uses have been ascribed to the spleen. It has been said to prepare the blood for the secretion of bile from it by the liver; to be the organ in which the red globules of the blood are formed; to be a counterweight to that of the liver, on the left side; and lastly, to afford an occasional supply of blood to the vessels of the stomach which secrete the gastric liquor, when that viscus is undüly distended with food. If the use I am about to ascribe to the spleen be admitted, it will be unnecessary to state objections to the opinions which have been mentioned.

I ſhall begin this inquiry by delivering the following propoſition.

All the motions which go forward in the human body are produced by external, and internal ſtimuli. Theſe ſtimuli exert their influence directly, or indirectly upon the blood-veſſels. From innumerable cauſes, they are liable to become *exceſſive* in their force. Such is the exceſs of this force, and ſuch the frequency of its occurrence from exerciſe, labour, intemperance, paſſions of the mind, and diſeaſe, that a proviſion to defend the tender and vital parts of the body from the effects of this force, ſeems to be a neceſſary appendage to the body. This proviſion, I believe, to be the SPLEEN. My reaſons for this opinion are founded upon the following facts.

1. The *ſtructure* of the ſpleen. It contains but one artery, and that a large one, with veins that ramify through every part of it. This artery is larger than that of the liver, which is four times as large as the ſpleen. It is, moreover, ſtronger according to Dr. Wintringham, than the aorta, from which it is derived, in the ratio of 1212, to 1000. Its veins poſſeſs a peculiar and ſpecific ſtrength, which aſſiſts in performing the office I have aſſigned to it. In having but one artery, it differs from thoſe viſcera, which have certain offices to perform upon the blood. Theſe viſcera are the lungs, the liver, and the heart, each of which has an artery intended for the excluſive purpoſe of its nouriſhment. The ſpleen having no work to perform upon the blood, and ſerving no other purpoſe, than a temporary reſervoir for it, is nouriſhed by its ſingle artery. Another artery would have been ſuperfluous to it. It has, moreover, no excretory duct. Its texture is ſoft and ſpongy, and of ſo diſtenſible a nature, that it will admit of an increaſe in its weight from blood, to three or four pounds, according to Dr. Bailie, without diſcovering the leaſt mark of a departure from its natural ſtate, in which it contains about a pound of

blood.* It is from the facility with which it is diſtended, that it has been compared to the corpora cavernoſa penis.

2. The *ſituation* of the ſpleen. It is placed near the heart, the centre and prime mover of inordinate and violent motions in the blood-veſſels, and in a part of the belly, in which from the frequent and lax ſtate of the ſtomach and bowels, and from the diſproportionate ſpace it occupies, to its ſize, it is capable of more prompt and greater diſtention, than it could have had in any other part of the body. To enable it always to retain its diſtenſible power, it is never leſſened in its ſize by fat.

3. The phenomena which take place in ſeveral of the common exerciſes of life. Where is the ſchool-boy who after running for fifteen or twenty minutes, in the ordinary plays of ſchools, has not felt a pain in the left ſide? This is ſo great ſometimes as to compel him to ſit down half bent, and even to make him cry out for relief. The name of this pain, I well recollect, indicated its cauſe. It was the "ſpleen." In laughing, the ſpleen performs the ſame kind office of opening a waſte gate, for the torrent of blood excited into action, by the violent and exceſſive agitation of the blood-veſſels; hence we ſo often obſerve perſons in paroxyſms of laughter, preſs upon the left ſide, to leſſen the pain produced by the diſtention of the ſpleen, and hence too, the phraſe of "ſplitting the ſides with laughing." It is the left ſide only, that is in danger of burſting, and the ſpleen only, in this ſide. When ſudden death occurs from laughing, it is probably induced by a rupture of the ſpleen, an accident which has, now and then, diſſections teach us, occurred from other cauſes. The pain in the left ſide, which is felt in riding a hard-trotting horſe, appears like that which is induc-

* In an account of a diſſection, communicated to Dr. Duncan, by Mr. James Elliot, he ſays "the Spleen was found, when taken from the body, to weigh eleven pounds thirteen ounces," and that its texture, figure, and bluiſh colour, were little, if at all changed." *Medical Commentaries.*

ed by running, and laughing, to ariſe wholly from an undue diſtention of the ſpleen. In all theſe caſes, it performs the office of a baſon, held by the hand of nature to receive, for a while, ſeveral pounds of blood, in order to preſerve the ſyſtem from diſeaſe and death. It is only when the ſpleen is diſtended to the extent of its capacity of retaining blood, that it imparts a ſenſe of pain, for I ſhall ſay preſently, it poſſeſſes but little ſenſibility in proportion to the number of its nerves.

4. The *quality* of the blood which has been procured from it. It is leſs coagulable than blood obtained from the arm by bleeding, or diſcharged from wounds. I have aſcribed this to the force with which it is thrown into the ſpleen, or to the feeble action of the veins, in propelling it back again into the circulation, both of which we know impair the coagulable quality in the blood. I am aware this quality in the blood is denied by Dr. Saunders, but he oppoſes to it only a ſingle experiment, made under circumſtances which do not contradict the numerous experiments of ſeveral other, equally reſpectable phyſiologiſts.

5. The nature of the diſeaſes which produce obſtructions in the ſpleen. Theſe are fevers of all kinds. Dr. Jackſon ſays, that in all the ſoldiers whom he opened, who had died of the yellow fever at St. Domingo, he found the "ſpleen full, and ready to burſt, or lax, and filled with grumous blood." In nearly an hundred perſons who died of the bilious tertians of Minorca, whoſe bodies Dr. Cleghorn examined after death, he found the ſpleen large, ſometimes weighing four or five pounds, and ſo exceſſively ſoft and rotten, that it had more the appearance of congealed blood, wrapped up in a membrane, than of an organical part." The ſame excellent phyſician tells us, that in a number of perſons who died of the dyſentery, he found the ſpleen in moſt of them "more or leſs in a putrid condition," induced probably in both caſes, by the great force, or quantity

of blood thrown into it by thoſe two diſeaſes. Morgagni ſays, "an enlargement, and obſtructions in the ſpleen are generally found in perſons who die of chronic fevers." The excitement of the blood-veſſels by the undue exerciſes of the faculties of the mind, produces the ſame morbid affections of the ſpleen. This has been proved by Dr. Proſt, who found it diſeaſed in ſeventeen out of eighteen maniacs, whoſe bodies he examined after death. The effects of the malignant paſſions, in a more eſpecial manner in diſordering the ſpleen, are admitted in common converſation, by our calling a *malicious*, a *ſplenetic* man. It has been remarked, that in perſons who die ſuddenly, the ſpleen is found to be of its natural ſize. The ſudden deſtruction of the excitement of the blood-veſſels in theſe caſes, does not give the ſpleen time enough to open its friendly door, to receive the exceſs of the ſtimulus which thus deſtroys life, by abſtracting from them for a while, three or four pounds of blood.

6. The diſeaſe which moſt commonly follows an enlarged, or obſtructed ſpleen, and that is hemorrhage. Hippocrates long ago aſcribed a bleeding from the noſe, to an obſtruction of the ſpleen. Vanſwieten ſays, he once attended a patient, in whom an uneaſineſs and tenſion of the ſpleen, enabled him to predict a return of the ſame diſeaſe. Lieutaud mentions nine caſes of perſons dying with hemorrhagies, in whom the ſpleen was found after death, diſeaſed from enlargement, and what he calls putrefaction. Four of thoſe hemorrhagies were from the noſe, the others were the ſtomach, bowels, and hemorrhoidal veſſels. There are few phyſicians that cannot ſubſcribe to the connection between hemorrhagies and obſtructions of the ſpleen. I think I have obſerved them moſt frequently to occur from the liver and ſtomach.

7thly and laſtly. The diſeaſes which follow the loſs of the ſpleen, whether by accident or deſign, in men, and other ani-

mals. Theſe are an enlargement of the liver, flatulency, indigeſtion, head-ach, and an increaſed ſecretion of ſaliva, urine, and ſemen.

I might here take notice of the exiſtence of a ſpleen, in all claſſes of animals, as a proof of its being intended for the purpoſe I have mentioned. I might likewiſe point out the difference of the ſpleen in the human ſpecies, from that of brutes, conſiſting chiefly in a texture calculated to afford more promptly and freely, a receptacle for the blood, when exerted into tumultuous motions; but this would lead me from the ſubject of the preſent inquiry. I have ſuppoſed this difference, ſo favourable to the quick diſtention and capacity of the ſpleen in the human ſpecies, to have been neceſſary, in conſequence of our blood-veſſels being more expoſed to exceſſive motions, than thoſe of inferior animals, through the medium of our greater portion of mind.

How far the ſpleen may act by abſorbing and ſuffocating undue impreſſions upon the nervous ſyſtem and the mind, I know not; but I think it probable, it ſerves this important uſe in the animal economy. My reaſons for this opinion are founded upon the great number of nerves which belong to the ſpleen, compared with its ſize, and upon its feeble ſenſibility. It is ſeldom inflamed, and when it is, the inflammation is attended with but little pain. Even wounds of the ſpleen are painful in a very feeble degree.

Upon taking a view of the manner in which other parts of the body are guarded from the evils of exceſs in quantity and motion, we ſhall be more readily induced to admit the facts and reaſonings, in favour of the uſe of the ſpleen, which I have mentioned. The eye is kindly defended from the evils of redundant light, by its black pigment; the liver from redundant bile, by a gall-bladder; the blood from redundant oil, by cells; and the

numerous cavities of the body, from redundant lymph, by a ſyſtem of abſorbents, happily calculated for that purpoſe. Why ſhould not the blood-veſſels poſſeſs a ſimilar advantage to protect themſelves from deſtruction, by means of a temporary reſervoir of their redundant motions, or quantity of blood? They would have been imperfect without it; and were it poſſible for the brain, the liver, the ſtomach, and the bowels to expreſs an opinion upon this ſubject, I believe they would ſay, they owed the preſervation of their blood-veſſels from rupture and obſtructions, and of their nerves from diſeaſe in a thouſand inſtances in the courſe of an ordinary life, to the prompt and friendly offices of the ſpleen; and were it poſſible for this long-degraded, and ever-inſulted viſcus, to obey the call to inanimate nature to praiſe its Creator, I believe it would raiſe as high a note in honor of his wiſdom and goodneſs as the eye, or the ear, or any other noble and obviouſly uſeful part of the human body.

I ſhall diſmiſs this phyſiological view of the function of the ſpleen, by briefly hinting at its application to pathology, and the practice of phyſic.

1. We are taught from the uſe that has been aſſigned to it, the neceſſity of blood-letting in all thoſe diſeaſes in which it has been found to be unduly diſtended with blood. Death is probably, in theſe caſes, the effect of an inability in the ſpleen to afford a reſervoir for a quantity of blood, ſufficient to leſſen the inordinate motions excited by it in the ſyſtem.

2. We are led by the opinion that has been delivered, to ſuſpect obſtructions to exiſt in the ſpleen, in all habitual hemorrhages, more eſpecially when they occur from the ſtomach, liver and noſe, and to rely not leſs upon aſtringent, than deobſtruent medicines, in our attempts to cure them. I am happy to find there are precedents in favour of this practice.

Donatus and Vogel, mention caſes of a vomiting of blood, being cured by removing obſtructions of the ſpleen.

3. The uſe that has been aſſigned to this viſcus, ſhould lead us to ſuſpect that many of the diſeaſes of the liver, ſtomach, lungs, and brain, are the effects of obſtructions in the ſpleen, and to employ ſuitable remedies to remove them. I am the more diſpoſed to inculcate this ſuſpicion from a fact related by Dr. Proſt, in his excellent work, entitled "Médecine eclairée par l'obſervation, et l'ouverture des corps." He ſays, of thirty-eight perſons who died of pulmonary conſumption, he found the ſpleen enlarged from two to ſix times its natural ſize, in one half of them. This is probably often the caſe when that diſeaſe is attended with a ſpitting of blood. It is poſſible, the efficacy of a ſalivation in curing it, may depend in part, upon its reſtoring the natural and healthy function of the ſpleen.

Of the Function of the Liver.

The deſign of the liver, I believe to be, to receive the blood from every part of the body, in order to ſubject that part of it, which had not been completely animaliſed, or diveſted of its chylous properties, to a ſecretory proceſs, and afterwards to pour the product of this ſecretion, mixed with the liquor of the pancreas, into the duodenum, to be abſorbed, or otherwiſe taken up by the lacteals, and conveyed with the chyle from the ſtomach into the blood-veſſels, in order to be completely converted into red blood, for the purpoſe of ſerving the various and important uſes, for which that fluid is intended in the human body.

The facts which have led me to adopt this opinion, are as follow.

1. The liver is preſent in nearly all animals. In this reſpect, it is upon a footing with the ſtomach. Of courſe there is reaſon to ſuppoſe it is deſigned to perform an office in the ſyſtem, equally neceſſary with the ſtomach, to the ſupport of life. It is no objection to the truth of this remark, that in ſome animals, there is no gall-bladder attached to the liver, and that in others, it diſcharges its contents into the ſtomach, or the bowels remote from the liver; for I hope to ſhew preſently, that the cyſtic and hepatic bile, ſerve very different purpoſes in the animal economy.

2. The immenſe and diſproportionate ſize of the liver, in the fœtus, compared with its ſize in adults, the deſign of which appears to be, that nouriſhment may be carried on excluſively by that viſcus, without any aid from the ſtomach.

3. The ſize of the liver in adults, and the quantity of bile which is ſecreted, ſuppoſed by Dr. Haller, to be four and twenty ounces, in four and twenty hours; five-ſixths of which he ſuppoſes, paſs directly into the duodenum. It is not probable this large apparatus, and copious ſecretion, can be of an excrementitious nature, and I ſhall hereafter mention ſome facts to prove, that it is not eſſential to the production of the chyle that deſcends from the ſtomach, and that it is effuſed, ſubſequent to the chyle having paſſed by the duodenum.

4. Chyle is found in the blood, after it has paſſed through the lungs. This has often been obſerved, when it has been drawn, ſoon after a full meal. It has likewiſe been demonſtrated by Dr. Hutchinſon, in his inaugural diſſertation, upon "the converſion of chyle into the blood," publiſhed in the year 1804, by a number of experiments, made upon the blood of living dogs. The chyle in theſe caſes, partakes too much of the nature of the aliments from which it is formed to be changed into

blood in the lungs, by the action of the air upon it, without undergoing a ſecond chylopoetic proceſs in the liver.

5. The quality of the venous blood, from which the hepatic bile is ſecreted. It is leſs diſpoſed to putrefaction, than arterial blood, taken from any other part of the body. This has been aſcribed by Dr. Caldwell, to its having parted with its oxygen. It is poſſible this may be one of the cauſes of its being leſs putreſcent, than arterial blood; but I am diſpoſed to aſcribe it chiefly to its containing a quantity of imperfect chyle, which we know paſſes more ſlowly into a putrid ſtate than blood. That this is the caſe, has been proved accidentally by Dr. Hutchinſon, by an experiment made without any reference to this ſubject, or even to that of his diſſertation; alſo by an experiment, made by Dr. Rollo, in which he found the blood of a man in a diabetes, to be leſs putreſcent, than the blood of a perſon in health. In that diſeaſe, we know the blood contains a preternatural quantity of chyle, often ſo great, as to diſcover itſelf, not only in the urine, but in ſeveral other of the ſecretions. Dr. Haller ſays, he has ſeen fat in the vena portarum. I ſuſpect the matter he ſuppoſed to be fat, was a portion of imperfect chyle.

6. The quality of the hepatic bile. Dr. Boerhaave, who ſays, he had taſted it, aſſerts that it is "mild, ſweetiſh, and watery." Dr. Haller ſays of it, "dulcior hepatica bilis, cyſtica amara;" but he adds, that he found a conſiderable bitterneſs in it, in a man who had been hung, and in a woman who had died ſuddenly. In both caſes, this bitterneſs was probably imparted to it in the act of dying, by a mixture of cyſtic bile with it. In animals, which have no gall-bladder, the Doctor admits the hepatic bile to be "uniformly ſweet." It is certain the livers of thoſe animals, which form a part of our aliment, have not the leaſt bitter taſte, except in thoſe caſes in which the contents of the gall-bladder have accidentally fallen upon them, in

the act of dreſſing them for the table. The hepatic bile is always ſweet in new-born infants. By a chemical analyſis, even the cyſtic bile of an adult, yields a portion of albumen, which we know to be one of the component parts of the chyle.

7. There are ſeveral experiments related by Dr. Fordyce, which prove chyle to be formed by the action of the ſaliva and gaſtric juice upon the aliment, without the mixture of hepatic bile with it. The Doctor tied up the ductus communis of an animal, and found the chyle afterwards to poſſeſs its uſual healthy properties. The ſame healthy and natural ſtate of the chyle, has been obſerved in thoſe caſes, when, not only the excretion, but the ſecretion of bile has been ſuſpended by that torpid ſtate of the liver, which has lately received from Dr. Pierſon, the appropriate name of Hepatalgia.

8. The ſtructure, ſituation, and function of the PANCREAS. It reſembles the ſalivary glands in its ſtructure; it ſecretes a liquor, which poſſeſſes the ſame diſſolving and animalizing properties as the ſaliva, and it pours this liquor ſo directly upon the hepatic bile, in the common duct, before it enters the duodenum, as to act upon it in a concentrated ſtate, and thereby to change it into perfect chyle. By aſcribing this uſe to the Pancreas, we reſcue it from its inſignificant office of performing a work of ſupererogation only to the ſaliva, and gaſtric juice, and give it a little ſovereignty or independent juriſdiction in the animal economy.

9thly and laſtly, I infer, that a ſecond chylopoetic proceſs goes forward in the liver, from the effects of intemperance upon it. It increaſes its labour, and thereby increaſes its ſize. This has often been obſerved in full feeders. But it does more. It produces a preternatural ſecretion of bile, more eſpecially when aliments conſiſt of an undue proportion of fat ſubſtances, which reſiſt the powers of digeſtion in the ſtomach. When

this labour has been long impoſed upon the liver, we obſerve it to ſuccumb like the ſtomach under hard uſage, and to produce, with its diſeaſes, the ſame morbid affections in other parts of the body.

Let us next inquire into the uſe of the gall-bladder, and the cyſtic bile.

From the ſituation of the gall-bladder, from the acute angle its duct makes with the hepatic duct, where they form the ductus communis, and from the circumſtances which influence its fulneſs, and depletion, I believe it to be intended wholly to ſerve the ſame purpoſe with reſpect to the liver, which the ſpleen ſerves to the whole ſanguiferous ſyſtem, that is, to afford a receptacle for redundant bile, and thereby to prevent the obſtruction of the hepatic bile into the duodenum, and its regurgitation into the pori biliarii. Unleſs this proviſion had been made for an exceſs in the ſecretion of bile, to which ſo many accidental cauſes contribute, the liver would have been expoſed to diſeaſe and diſorganization every day. It is poſſible, the leſs nutritious particles of the hepatic bile may be thrown into the gall-bladder, but whether this be the caſe, or not, the bile appears to undergo a putrefactive proceſs in it. I infer this, from the bitterneſs it acquires during its ſtagnation in the gall-bladder. The ſame bitter quality, is the offspring of the putrefaction of certain vegetables, and of ſome animal ſubſtances. It probably takes place in other ſecretions of the body. Dr. Darwin aſcribes the bitter taſte we often perceive upon the tongue, to a morbid change in the quality of the liquor, which is ſecreted upon its ſurface; and perhaps the bitterneſs of the wax, which is ſecreted in the meatus auditorius is derived from a change induced in it, by its ſtagnation, ſimilar to that which occurs in the bile. It is true, the bile is leſs putreſcent than the blood, according to an experiment made by Dr. Saunders, and ſince repeated by a graduate, in the Univerſity of Pennſyl-

vania; but the ſame indiſpoſition to putrefaction takes place in certain vegetables, after they acquire, by decay, a bitter taſte. Of the truth of this remark, I ſatisfied myſelf by the following experiment. Into a two-ounce phial, I put half an ounce of beef, cut into ſmall pieces, with the ſame quantity of the rotten and bitter part of an apple, and an ounce of water. Into another phial, I put the ſame quantity of beef and water, and placed them both under the ſame circumſtances of heat. The latter putrefied many hours before the former. Had the rotten part of the apple been expoſed alone to heat and air; I have no doubt it would have undergone another putrefaction. The ſame remark applies to the bile, out of the body. Even the fæces undergo a ſimilar change, and hence we find them inoffenſive, as remote cauſes of diſeaſe, unleſs they have been expoſed long enough to the action of the ſun and air, to excite in them a ſecond putrefaction. While I ſuppoſe the bile to be of an excrementitious nature, I admit that it ſerves ſeveral valuable purpoſes in the animal economy. In ſtimulating the bowels, it enables them to propel their contents downwards, and imparts to them at the ſame time a tone, which is communicated to the whole ſyſtem. It ſerves likewiſe, to precipitate thoſe parts which are incapable of affording nouriſhment to the body from the chyle; and perhaps, it retards its tendency to putrefaction, eſpecially in hot weather. Should the bile exert this antiſeptic quality, it will only be upon a footing with the nitrate of potaſs, and ammonia; both of which, although the offspring of putrefaction, have a powerful effect in preventing it.

The liver has been called, by ſome phyſiologiſts, a ſecretory, and by others, an excretory organ. The reader will perceive, that I adopt both theſe opinions. The hepatic duct diſcharges its ſecretion, and the cyſtic duct its excretion into the duodenum. The gall-bladder appears to be to the liver, what the colon and rectum are to the ſtomach; the receptacle only of hepatic

fæces. The quantities of each, accord with the exceſs or deficiency of aliment taken into one, and of imperfect chyle received and ſecreted by the other.

From a review of the function of the liver, which has been delivered, we are led, in the firſt place, to admire the goodneſs of the Creator of our bodies, in thus providing two viſcera for preparing the matter, which is neceſſary to repair their daily waſte, each of which is provided with an ample apparatus for that purpoſe. The nouriſhment of the body is, in this reſpect, upon a footing with the double ſenſes of viſion and hearing. In caſes of ſickneſs, indigeſtion, or long faſting, in which the office of the ſtomach is ſuſpended, the liver performs a vicarious duty; and when its chylopoetic office is impaired, or interrupted, the ſtomach, by performing its functions with double care, prevents the evils of an abſtraction of nouriſhment from the body. But there is another inſtance of alternation between the ſtomach and liver, in their reſpective offices. While the former is moſt buſy, the latter, from the preſſure of the ſtomach upon it, is moſt idle. It is only after the chyle from the ſtomach has paſſed by the duodenum, that the liver pours its chyle into it. In this way the bowels, and the lacteals are kept in a conſtant ſtate of moderate tenſion, and activity. The ſame diſtention and preſſure of the ſtomach, which impedes the ſecretion of hepatic chyle, ſqueezes the cyſtic bile from the gall-bladder; by which means it is enabled to perform one of the offices I have aſcribed to it: namely, to ſeparate the fæcal matters from the chyle. From the ſituation of the gall-bladder in the concave part of the liver, the preſſure of the ſtomach is neceſſary to elevate its bile to the level of the cyſtic duct, in an erect poſture of the body. In a recumbent poſture, the bile deſcends more eaſily into the duodenum, eſpecially in lying upon the back. It is from its more copious effuſion into the bowels during ſleep, that the practice of going to ſtool in the morning, has been one of the habits of

the human body in all ages and countries. It is from the ſame cauſe that perſons who are afflicted with an exceſſive ſecretion, and excretion of bile, are moſt apt to be ſick, or puke bile in the morning.

I am aware that I differ from all modern and ancient phyſiologiſts, in ſuppoſing that the preſſure of the ſtomach upon the liver, ſuſpends the ſecretion of bile. I infer it, becauſe preſſure ſuſpends ſecretion in all other glands. We often ſee it in the kidneys from the preſſure of the colon, when diſtended with fæces upon them. The current opinion of the ſecretion of bile, being increaſed by the preſſure of the ſtomach upon the liver, took its riſe in a belief that its mixture with the aliment in the duodenum, was neceſſary to conſtitute chyle. The reader will perceive further, that I do not admit of the gall-bladder being filled by the regurgitation of hepatic bile, in conſequence of an obſtruction, induced upon the ductus communis, by the diſtention of the duodenum. I ſuppoſe it to be filled only when the liver ſecretes and pours its bile in too large quantities to be conveyed into the bowels. In this caſe, it affords the ſame relief to the liver, that the ſpleen affords to the blood-veſſels, by becoming its waſte-gate. Perhaps the paſſage of the bile into the gall-bladder, may be aſſiſted by the fibres of the muſcular coat of the cyſtic duct, performing their actions in that direction. In this way we know many fluids are propelled, contrary to their gravity, in different parts of the body.

2. The economy of the double proceſs which has been deſcribed for preparing the nouriſhment of the body, deſerves our notice. Had it been otherwiſe, all that portion of chyle, which was incapable of being made into blood, by paſſing through the lungs, would have been loſt to the ſyſtem. If the office I have aſſigned to the liver, be correct, it may be compared to the ſecond bolting cloth of a mill; or perhaps, more properly, a frugal houſewife, who collects all the meat which has refuſed to

yield its nouriſhment to a ſingle operation of fire; and by cooking it a ſecond time in other veſſels, and by other modes of heat, extracts from it a ſecond portion of nouriſhment.

3. From the opinion of the uſe of the liver which has been delivered, we are enabled to underſtand the reaſon, why we often obſerve large and offenſive fæcal diſcharges, in perſons who have eaten little or no food. I have frequently ſeen them with ſurpriſe in children, while labouring under the colera infantum, who had paſſed many days without retaining a ſpoonful of aliment, or even of water upon their ſtomachs. The ſame remark is made by Dr. Cleghorn, in his account of the dyſentery in Minorca. It is ſo pertinent to our ſubject that I ſhall inſert it in his own words. After mentioning the exhibition of purges, he ſays "They brought off a prodigious quantity of round hard fætid lumps, to the great relief of the patient; nor is it eaſy to conceive how ſo much had been collected, or where it had been lodged ſo long; as in ſome caſes I have obſerved, the patients having eaten nothing for two or three weeks, that could furniſh much excrement; and during that time had taken ſeveral glyſters, and common cathartics which brought away liquid ſtools." From the diſpoſition which the bile has to form itſelf into ſolid ſubſtances, or what are called gall-ſtones; I am diſpoſed to believe that the lumps taken notice of by Dr. Cleghorn, or what we call Syballa, are always compoſed of hepatic fæces. The meconium of children, appears to be formed from them.

4. The uſe which has been aſcribed to the liver, leads us to diſcover the reaſon why a diſeaſed ſtate of the ſtomach, is ſo often followed by a diſeaſed ſtate of the liver. When the former performs its work of digeſtion imperfectly, it impoſes double labour upon the latter, in preparing the chyle for the nouriſhment of the body, and this neceſſarily brings on diſeaſe.

5. It has often been remarked, that the digeſtive proceſs in the ſtomach required a healthy and tranquil ſtate of the whole ſyſtem. The ſame thing may be ſaid of the chylopoetic proceſs in the liver. It is impaired by all general, and by many local diſeaſes. It ſuffers, according to Dr. Moſely, in all the acute and chronic diſeaſes of the Weſt Indies. Dr. Paley aſcribes to it, the ſame ſympathy, with all the diſeaſes of the Eaſt-Indies. Dr. Boerhaave ſuppoſed it to be affected, in ninety-nine out of an hundred chronic diſeaſes, from all their cauſes. There is ſcarcely a diſeaſe in the head, ſo light, that does not diſturb its natural actions in a greater or leſs degree.

6. Children are often affected with a ſudden ſwelling and hardneſs of their bellies, which as ſuddenly ſubſide, from the operation of a purge, or from friction with the hand. It has been aſcribed to wind, alſo to worms in their bowels. May it not be occaſioned by a temporary engorgement of the liver, brought on by an exceſs of aliment taken into the ſtomach, and by a redundant quantity of chyle, prepared from it?

The opinion that has been delivered of the function of the liver, is calculated, not only to explain the cauſes and phænomena of ſeveral diſeaſes, but to ſuggeſt ſeveral inferences that may be uſeful in the practice of phyſic.

1. Has the liver been elevated from its former humble and tributary ſituation in the ſyſtem, to ſhare with the ſtomach, in the high and important office of preparing nouriſhment for the body? Let us never forget to inquire into its ſtate, with the ſame ſolicitude that we inquire into the ſtate of the ſtomach, in all general diſeaſes.

2. Has a ſympathy been pointed out between the ſtomach and liver in their reſpective offices? Let us ſuſpect their diſeaſes to be reciprocal. The influence of the liver, when

diſeaſed, in bringing on ſtomach complaints, is well known, and Dr. Thomas Clark has informed us in his "obſervations upon the diſeaſes of the Weſt and Eaſt Indies," that a diſeaſed ſtomach, is the conſtant, and often the firſt ſign of a diſeaſed liver in that country.

3. Do we wiſh to reduce the ſyſtem by the *ſudden* abſtraction of nouriſhment? In vain ſhall we attempt to do ſo, by limiting the quantity of aliment taken into the ſtomach, while the liver continues to ſupply the lacteals with alimentary matter. It can only be effected by combining active purges with abſtinence from food.

4. Do we often meet with a preternatural ſecretion and excretion of bile appearing in headach, languor, ſickneſs, puking of bile, and an occaſional diarrhœa? I have taken the liberty to call this diſeaſe, a diabetes of the liver, and have ſuppoſed it to depend upon original debility, and increaſed morbid action in its ſecretory and excretory veſſels. It occurs in the gout, in perſons habitually intemperate, and in the ſeaſon of bilious fevers in all warm countries. It yields to evacuating or tonic remedies, according to the ſtate of the ſyſtem.

5. Do we now and then meet with a bilious diarrhœa, attended with the appetite and digeſtion unimpaired? I have called this diſeaſe a lientery of the liver, and have ſuppoſed that the chyle paſſes through it into the bowels, without undergoing the change that is neceſſary to procure its admiſſion into the lacteals. The remedy in this diſeaſe is depletion, more eſpecially by abſtracting nouriſhing aliment. I have known it to yield to a diet conſiſting wholly of vegetables, after purges and the moſt powerful aſtringents had been uſed to no purpoſe.

6. Does the formation of ſound and healthy blood depend upon the healthy action of the liver, and does the liver ſuffer more or leſs, from all general, and many local diſeaſes? It follows, of courſe, that a medicine which is ſaid to act ſpecifically upon glandular parts of the body, and which is known to act powerfully upon the liver, occupies deſervedly the firſt rank of all the articles in the Materia Medica. Such a medicine is mercury, and hence its uſefulneſs and fame in all general and chronic diſeaſes.

7. Is the ſtomach, from diſeaſe, unable to retain or digeſt aliment, or is its paſſage into the ſtomach, or duodenum, obſtructed by ſchirrus, or any other cauſe? The uſe that has been aſſigned to the liver, ſhould lead us to double our exertions in conveying aliment into the ſyſtem, by means of injections into the lower bowels. It has been objected to this mode of nouriſhing the body, that aliment, when abſorbed, could not perform that office without being converted into chyle, and that this liquor was prepared, excluſively, by the ſtomach. We now ſee a change of aliment into chyle may be performed, independently of the ſtomach, by means of the liver.

Of the Functions of the Thyroid Gland.

The deſign of this gland, I believe, to be to defend the brain from the morbid effects of all thoſe cauſes which determine the blood into it, with unuſual force.

My reaſons for this belief are founded, 1ſt. upon its ſituation and ſtructure. It is ſeated upon the anterior parts of the larynx, and is ſupplied with four large arteries, which return their

blood by means of veins, without terminating in an excretory duct, or producing any thing like a ſecreted liquor.

2. Upon its larger ſize in women than in men. This proviſion was neceſſary to guard the female ſyſtem from the influence of the more numerous cauſes of irritation and vexation of mind, and the more acute bodily diſeaſes, to which they are expoſed, than the male ſex. The ſenſation known by the name of globus hyſtericus, appears to be produced by the diverſion of exceſſive mental impreſſions from the brain to the thyroid gland. We often obſerve it to be conſiderably enlarged, in hyſterical paroxyſms. A remarkable caſe of this kind, is taken notice of, by Dr. Whyt, in his treatiſe upon nervous diſeaſes. It is probably from the greater ſize, and more frequent excitement of the thyroid gland in women than in men, that the former are more ſubject to Bronchocele, than the latter.

3. Upon the effect of certain exerciſes of the body and mind, upon the thyroid gland in its diſeaſed ſtate. Dr. Broadbelt relates in his inaugural diſſertation upon Bronchocele, publiſhed in Edinburgh, in the year 1794, that ſuch of the inhabitants of Derbyſhire, in England, as are afflicted with that diſeaſe, are ſubject to a pain in the gland, and to an increaſe of its ſize when they are unuſually excited by running or anger.

4. Upon the effect which diſeaſe in the thyroid gland, and its loſs, have upon the brain. The bronchocele of the Cretins is generally accompanied with imbecility of mind; and Dr. Chapman informed me, that Mr. Cooper, Surgeon of St. Thomas's Hoſpital, in London, had produced ſomething like fatuity in ſeveral dogs, by extirpating this gland.

It is poſſible this gland may ſerve the additional purpoſe of an outlet, to undue impreſſions upon the lungs and windpipe, by

an exceſs in the exerciſes of the voice and ſpeech, and thereby defend thoſe important parts of the body from rupture and diſeaſe.

I ſhall conclude this inquiry, into the functions of the ſpleen, liver, pancreas, and thyroid gland, by informing the reader, that I have yielded reluctantly to the ſolicitations of my pupils, and the advice of my medical friends, in offering it to the public in its preſent immature ſtate. My beſt wiſhes are for an early examination, and a ſpeedy refutation of the opinions contained in it, if they are erroneous; and if otherwiſe, that the inferences to which they lead, may be immediately applied to the practice of medicine.*

Philadelphia, May 13th, 1806.

* Since I have adopted, and taught the uſe I have aſſigned to the ſpleen, a former pupil of mine, copied from a French edition of one of Heiſter's works, by Dr. Senac, in the poſſeſſion of a phyſician, in a neighbouring ſtate, and put into my hands a ſhort note, in which the Doctor glances at the opinion I have delivered; but rejects it as chimerical. The peculiar ideas upon that ſubject, and all the others contained in the above inquiry, occurred to me, while I was employed in inveſtigating the cauſes of the obſtructions in the ſpleen and liver, which take place in madneſs.

Reply to Dr. Peachey Harrison's *Obſervations on Impregnation.*

By William P. Dewees, M. D.

Philadelphia, April 2d, 1806.

Sir,

I AM extremely averſe to enter on any thing like controverſy; but am obliged to notice, "Obſervations on Impregnation, by Dr. Peachey Harriſon," as, the author of them ſeems ſatisfied that he has removed the obſcurity that has ſo long veiled this intereſting ſubject. This, in my opinion, he has not ſucceeded in,* notwithſtanding he has purſued the "coy maid" (Nature) into ſome of her receſſes, and endeavoured to extort from her ſome of her oracles. I boaſt of no ſuch familiarity with this high perſonage, and ſhall be very well ſatisfied if ever ſhe allows me a glimpſe of her operations, either through keyhole or cranny. I freely acknowledge ſhe has never admitted me into her receſſes; I will not therefore pretend with certainty to ſay, how ſhe performs her ſecret actions within them.

Did we implicitly rely on this gentleman's aſſertion, we ſhould have nothing to wiſh for on this ſubject, as he aſſures us his opinions are not "deduced from uncertain conjectures, but from reſponſes, rendered by interrogated nature." But alas! this ſame "coy maid" when he purſued her into her ſecret receſſes, appears to have played him a ſlippery trick; for, inſtead of "the reſponſes of interrogated nature," ſhe appears to have furniſhed him with nothing but "uncertain conjectures;" this ſhe

* As he has not brought forward a ſingle ſubſtantiated fact, a probable conjecture, or a plauſible hypotheſis.

perhaps has inflicted on him as a puniſhment for purſuing "her into her ſecret receſſes," and endeavouring to extort from her ſome of the oracles. He confeſſedly admits her reſponſes were extorted, they muſt therefore have been given unwillingly; and that which is given by "compulſion" (even, where reaſons are as plenty as blackberries) is not always given truly. But can that which is given by Nature be otherwiſe than true? No; but is the gentleman certain that it was from Nature's oracle the reſponſes came?

Let us endeavour to aſcertain this; he tells us, p. 422, "That there is a ſpecific ſenſibility reſident in the female genital ſyſtem;" and "this ſenſibility reſides in the os tincæ chiefly, but alſo in the uterus itſelf, in the fallopian tubes, and *perhaps*, in the ovaria." Is this conjecture, or the reſponſes of nature? Part is certainly admitted as ſuch, ſince he ſays, *perhaps* in the ovaria; this part certainly is not the dictum of the "coy maid." But let us proceed. "I am inclined to think, (mark, inclined to think) the ovaria poſſeſs a ſhare of venereal ſenſibility; becauſe, as venereal deſire is firſt awakened in males by the ſtimulus of the ſemen, *ſo it is probable* (very candid from a man whoſe opinions are not deduced from "uncertain conjectures") it is firſt arouſed in females by one or more ovula acquiring maturity." Are theſe facts? No; it is well known that venereal deſire is awakened in males before the ſecretion of ſemen, and after the extirpation of the teſtes. Boys at very early periods give evidence of paſſion of this kind, before we can poſſibly ſuppoſe ſemen to have been ſecreted, unleſs this ſecretion takes place at a period not dreamed of by phyſiologiſts. Who has not witneſſed the moſt flagitiouſly wanton acts in boys of ten years old or even younger? I myſelf have lately witneſſed an act of this kind, the moſt horrible to be conceived of; a boy of nine years old, was caught in the act for venereal gratification, with a child of eighteen months, the child was under my care,

and much injured. But this is by no means a ſolitary caſe; every boarding ſchool for boys, will furniſh proofs of early deſire. After the extirpation of the teſtes we know deſire remains; the eunuch, the horſe, and barrow furniſh inſtances of it. In the female nearly the ſame obſervations will apply; girls are known to exhibit many marks of libidinous deſire, before we can with propriety ſuppoſe "one or more ovula" have acquired maturity; they certainly do not have theſe deſires where we know "one or more ovula" are perfected; and women retain their venereal appetite, when we muſt ſuppoſe there is not "one or more ovula" to be matured; namely, after the menſes have ceaſed to flow; and we may add, there are women of very warm paſſions, and who perhaps have enjoyment from ſexual intercourſe in its moſt exalted form, yet ever remain barren. Where are the ripened ovula in ſuch women, or how are we to account for their receiving gratification, when we have no right to ſuppoſe, "one or more ovula" have acquired perfection to produce the venereal impulſe?

"That the venereal ſenſibility reſides in the os tincæ, &c." continues Dr. Harriſon, "I infer from the ſtructure of the parts, and eſpecially from the projection of the collum uteri into the vagina, where it will of neceſſity, in the ſexual intercourſe, receive irritation from the ſoft and velvet-like head of the penis, well calculated to produce what I have called the venereal orgaſm; which conſiſts in a certain excitement of the uterine ſyſtem, accompanied with exquiſite ſenſations, ſimilar to thoſe which take place in the male, at the time of the ejection of the ſemen, and, with *an unknown deſire* to receive the venereal ſtimulus."

From this it would appear that the os tincæ, in conſequence of the irritation from the male penis, becomes the active ſource of venereal pleaſure. How does this tally with fact, and obſervation? We will inquire. The os tincæ, from the firmneſs of

its texture, and general want of ſenſibility, as far as can be determined by the touch, ſeems but ill calculated for this important office, more eſpecially as all women, as far as we know, have this part; but there are very many women who feel no pleaſure from this act, and others to whom the venereal congreſs is truly diſguſting, and yet theſe women are prolific. Now, unleſs it can be proven, that the os tincæ of the woman, who feels no pleaſure, and that of the one who does, be different, we muſt conclude, that the os tincæ is not the ſeat of venereal pleaſure. It perhaps may be doubted by thoſe who have not made the inquiry, whether this circumſtance obtains; but for the fact I can pledge myſelf, at leaſt, as far as the teſtimony of the women themſelves may go: inquiries were made of many, with the view of aſcertaining the fact; and they were conducted under ſuch circumſtances as could leave no room to doubt; the queſtions to this point were always anſwered with ſeeming candour, becauſe they were thought eſſential to the hiſtory of their complaints, or neceſſary to their cure. Beſides, women in the latter months of pregnancy, who do feel pleaſure from ſexual intercourſe, have equal enjoyment when the os tincæ is entirely obliterated, or out of the reach of the penis.*

We ſhould be glad to know, what is to be underſtood by the female feeling an unknown deſire; can we have a deſire

* This fact is of high import, and Dr. H. appears to have been aware of its force, ſince he endeavours to obviate it, by calling in queſtion, in ſome meaſure, the fact, by ſaying there is "a diminiſhed venereal ſenſibility," and a retraction of the cervix uteri from the vagina in the progreſs of geſtation; and hence it ſeems highly improbable that, during this period, the venereal orgaſm ever takes place.

If we underſtand what Dr. H. means by venereal orgaſm, we ſhall certainly inſiſt, that the gratification from ſexual intercourſe (in women who ordinarily enjoy it) is as perfect in the ninth month of geſtation, as in the firſt, or before it has even taken place.

and not know it? If this be not an Iriſhiſm, it is very much like one.

"Irritation applied by the glans penis to the os tincæ," ſays the doctor, page 423, "well prepared to receive this irritation by its projection into the vagina, and by its extreme ſenſibility, is the immediate cauſe of the venereal orgaſm, or that *unknown deſire* which the female ſometimes feels, in coition, for the ſeminal ſtimulus; and ſecondly, that an abſorption of the fecundating fluid, when applied to the os tincæ during the orgaſm, is the proximate effect thereof; and in the third place, that the tranſmiſſion of the ſemen to the ovaria, by the proper action of the uterine ſyſtem, is as naturally the conſequence of abſorption, as deglutination is of agreeable aliment taken into the pharynx. And laſtly, that impregnation is the final cauſe of the ſexual intercourſe, and of the pleaſure with which it is accompanied."

"It clearly follows from what has been ſtated above, that impregnation will never take place unleſs the venereal orgaſm has been excited; and it is equally plain, that it will not happen unleſs the ſemen is brought in contact with the os tincæ during the venereal orgaſm; and it follows with equal clearneſs, that an appoſition of the urethra to the os tincæ, at the ſame time will be important, if not indiſpenſable; not indeed for the purpoſe of the injection of the ſemen into the uterus, but that the ſeminal ſtimulus be applied to the os tincæ at the moment when it is prepared to abſorb it and convey it to the ovaria."

It has already been obſerved, that in our opinion the os tincæ has little or no ſenſibility; or certainly not that degree of it as would render it the ſeat of pleaſure, were it ever ſo well ſituated to receive the reiterated frictions of the penis; but it is by no means well ſituated for this purpoſe, as it is ſubject to a great variety of caſualties which will prevent its having a fixed place

within the pelvis. It therefore cannot from its "extreme ſenſibility" be the immediate cauſe of the venereal orgaſm, or "*that unknown deſire* which the female ſometimes feels, in coition, for the ſeminal ſtimulus;" firſt, becauſe it does not poſſeſs the ſenſibility which the author of "obſervations, &c." would attach to it; and ſecondly, that if even it did poſſeſs it, its uncertain ſituation within the vagina, would render it extremely difficult to profit by it. It is we conceive altogether an aſſumed principle to make the ſeat of venereal pleaſure reſident in the os tincæ; it is one that cannot be proven either by analogy, or experiment; for, on the contrary, this part has been touched an hundred and an hundred times by every practitioner of midwifry, without their having ever diſcovered it to poſſeſs "extreme ſenſibility."

But did it poſſeſs ſenſibility even to the extent the gentleman would wiſh, how is its form calculated to profit by it? In the unimpregnated ſtate of the uterus, but more eſpecially in virgins, this part is conical, with its apex looking outwards; its extreme part is drawn almoſt to a point; at its ſides ſpaces are offered by this part being pendulous in the vagina; the penis has with the os tincæ, (ſuppoſing it fixed,) five places of contact; above, below, on each ſide, and directly againſt its point; now ſhould "the velvet-like head of the penis" come immediately in contact with this extremity of the neck of the uterus, (which Dr. Harriſon inſiſts on being neceſſary that it may receive the ſeminal ſtimulus) what would be the conſequence; firſt, the penis would receive conſiderable injury from coming frequently againſt ſo firm a body as the os tincæ; and ſecondly, it would be productive of great pain to the woman, as happens when this contact does take place, in caſes of any degree almoſt, of precipitation of the uterus, by rudely forcing it upwards by the projection of the penis: pleaſure therefore cannot reſult from the extremity of the penis coming in contact with the extremity of the neck of the womb; if pleaſure then muſt be produc-

ed by theſe bodies touching each other, it muſt be by the penis paſſing from ſide to ſide, or from top to bottom of the neck, much after the manner a dexterous butcher whets his knife on a ſteel. But this mode of producing pleaſure, or the venereal orgaſm will not anſwer Dr. H.'s purpoſe, ſince the ſemen may be thrown on either ſide of the os tincæ, and of courſe would fail producing impregnation. "Had this fact and ſome others" we ſhall preſently ſtate, been known to Dr. H. he would not have adopted the hypotheſis which he labours ſo ſtrenuouſly to maintain.

By venereal orgaſm, we muſt underſtand a ſomething produced by, or the conſequence of pleaſure; and this effect is conceived abſolutely neceſſary to impregnation: we have already remarked, and ſhall now inſiſt that this is by no means neceſſary. Our reaſons for thinking ſo are, firſt, That many women are perfectly indifferent to the venereal congreſs; ſome affirm they never felt any thing like pleaſure, and others that it is not only diſguſting, but extremely painful: ſecondly, many women who labour under procidentia uteri have conceived, where the ſituation of this viſcus, (their own acknowledgements out off the queſtion) forbids the idea of pleaſure reſulting from ſexual intercourſe. But we think we have a right to inſiſt on the weight, which their teſtimony gives us, and this teſtimony goes directly to prove, that pleaſure is not neceſſary; nay, further, that conception has taken place in many inſtances of prolapſed uteri, where pain never failed to attend ſexual intercourſe. Thirdly, that, with other animals, ſuch as the dog, frog, newt, &c. on which the ingenious and accurate Spallanzani experimented, pleaſure or venereal contact was not neceſſary; his ſyringes were ſufficient, and they could hardly have been productive of pleaſure; the ſame we believe would obtain in woman. Fourthly, many inſtances have occurred where the ſecluſion of the vagina has been ſuch, as to prevent moſt effectually the "velvet-like head of the penis," and the exquiſitely

ſenſible os tincæ from coming in contact. Dr. H. has thought to provide againſt theſe obſtinate, and for him unfortunate facts, by ſaying, "that an appoſition may take place, appears to me entirely probable, (more probabilities! where are the reſponſes of the "coy maid" to theſe important interrogatories?) from the phenomena which very generally occur in a ſexual intercourſe, in which the venereal orgaſm is awakened; among which are the following: the cervix uteri becomes turgid (how do you know this?) the ligamenta rotunda contract;" (what proof have you of this?) have you not here aſſerted more than can be proven? Could this be proven, it unfortunately would very much militate againſt your hypotheſis, ſince the effect of this contraction would be to make the fundus uteri approximate the pubes, and conſequently make the os tincæ recede, or touch the ſacrum; this ſituation of the os tincæ would be very unfortunate for the production of venereal orgaſm, as it would be out of the way of the "velvet-like head of the penis."

"The uterus is depreſſed in the pelvis, and the os tincæ is brought nearer the orificium externum, and *aſſumes* a direction favourable to an appoſition;" how can it "*aſſume* a direction favourable to an appoſition," in caſes like thoſe recorded by Ruyſch, Mauriceau, Hilldanus, Harvey, &c.—where not only one, but more barriers oppoſed the introduction of the penis into the vagina? in theſe caſes we muſt regard the women who laboured under theſe diſadvantages as virgins in effect, and we can hardly ſuppoſe the uterus could have been ſo extremely accommodating as to crawl down into the pelvis and apply its os tincæ directly to the ſmall aperture that was free in theſe caſes, that it might open-mouthed receive the ejected ſemen; for here it muſt be remembered that no venereal orgaſm had taken place, ſince the "velvet-like head of the penis" was on the outſide of the grating, and could only peep through a very ſmall cranny at the os tincæ, anxious for "an unknown deſire," but which, moſt lamentable to tell, could not

be excited, becauſe there was a moſt obſtinate and envious partition between them. I would now candidly aſk this gentleman, if he can for a moment ſuppoſe, the uterus ſhall ſo far change its ſituation, in virgins more eſpecially, (for theſe women were phyſically ſo) as to have its os tincæ down to the os externum, or even within an inch of it, where no diſeaſe of the vagina, as far as we know, exiſted, to produce a procidentia uteri; I am ſure he muſt anſwer, he cannot. Theſe caſes will therefore furniſh moſt unequivocally the following concluſions: firſt, that it is not neceſſary to impregnation for the penis and os tincæ to come in contact. Secondly, that the venereal orgaſm, as far as is dependant on this circumſtance is not neceſſary to impregnation: and thirdly, that Dr. H.'s hypotheſis, which is entirely predicated on theſe circumſtances, muſt neceſſarily fall to the ground.

Having thus noticed Dr. H.'s theory of impregnation, we ſhall proceed to conſider his conjectures reſpecting ſuperfœtation.

After having expreſſed ſome doubts as to the poſſibility of ſuperfœtation taking place, Dr. H. obſerves: "But ſuppoſe ſuperfœtation may happen, we are then only prepared to offer ſome conjectures as to the manner in which it may happen; and we would aſk, why it may not take place as we have endeavoured to evince other impregnations do? This, it will be objected, will be impoſſible, the paſſage from the vagina into the uterus being obliterated after impregnation; but does it appear that this is the fact? Does not the ſmalleſt drop of blood effuſed into the uterus during geſtation eaſily find its way into the vagina? The fact is, the paſſage is only obſtructed with a viſcid mucus, which might, it is conceived, be diluted in time of coition, ſo as to admit the paſſage of the ſemen into the uterus, whence it may be conveyed to the ovaria by the fallopian tubes, as in other fecundations; for it will not be aſſerted,

that the openings of theſe tubes in the uterus are always obſtructed by the placenta."

I have choſen to give a complete quotation of Dr. H.'s theory, that no charge of miſrepreſentation might attach; by this opinion it is admitted, that a viſcid mucus does obſtruct the neck of the uterus, and that unleſs this be diluted, the ſemen could not have acceſs to the inſide of the uterus—how is the ſemen to get mixed with this mucus to dilute it? Does it poſſeſs any chymical power over it? If it does not, how will the thick tenacious fluid the ſemen, be made to act upon the viſcid mucus already preſent in the neck of the uterus, ſince, it will have to overcome the attraction of gravitation to remain an inſtant in contact with it? It may be ſaid, that the attraction of coheſion is ſuperior to that of gravitation; let it be admitted; the ſemen then can only act on that part of the mucus which is moſt inferior, and if it dilutes this, it will eſcape into the vagina, unleſs Dr. H. will point out ſome power in the uterus by which this inconvenience may be remedied. But we will not ſtick at trifles; we will allow the mucus to be diluted by the ſemen; but to effect this, it muſt be mixed with it, therefore the mucus and ſemen muſt travel together. What is there to obſtruct their journey? Firſt, theſe fluids muſt ſeparate the decidua from the uterus that they may paſs; how are they to do it? Secondly, when they have effected this ſeparation, they muſt continue it until they arrive at the fallopian tubes; when they get there they muſt clear the decidua from their mouths; how are they to do this? chemically, mechanically, or by a ſpecies of legerdemain? This Dr. H. is bound to anſwer and not we.

We have now ſuppoſed that theſe fluids have the power of ſeparating the decidua from the uterus, with which it is in very intimate contact; but will no injury reſult to the uterus from this ſeparation? Certainly, more or leſs hemorrhagy will enſue in the inſtant of ſeparation, and will flow into the vagina, for Dr. H. admits, that the "ſmalleſt quantity of blood effu-

ſed," will do this; there will then be counter-currents, the ſemen &c. paſſing up, and the effuſed blood downwards; where reſides the power to give theſe different directions? But it may be urged by the friends of this hypotheſis, although Dr. H. has forgotten to avail himſelf of it, that the decidua is porous and ſpongy, and that the ſemen, &c. will be tranſported by capillary attraction—this to be ſure is plauſible, and might, as a dernier reſource, be reſorted to, had not Dr. H. himſelf unfortunately deſtroyed all claim to the ſubterfuge, by admitting that the ſmalleſt drop of blood effuſed into the uterus during geſtation finds its way eaſily into the vagina. Where is the capillary power when this is allowed to take place? or will Dr. H. ſuppoſe, there is a peculiar and "unknown" kind of attraction, between the "mucus diluted by ſemen," and the decidua? Be this as it may, it appears to us not only as matter of great improbability, but of total impoſſibility, that the ſemen ſhould paſs in this way to the ovaries. There is then but one more way left for the ſemen to get to the ovaria through the uterus; and this ſuppoſes the animalcular diſcoveries of Leuwenhoek to be eſtabliſhed beyond doubt. We will ſuppoſe then, in conſequence of the union of the ſemen with the "viſcid mucus" with which the neck of the uterus is obſtructed, the latter becomes diluted; this is again ſuppoſed to be by ſingle elective attraction; that is, the mucus in which the animalculæ are ſuſpended, unites with the "viſcid mucus" of the os tincæ, and becomes diluted, and ſets them at liberty: they, as ſoon as freed from their bondage, by a ſpecies of inſtinct peculiar to themſelves, ſcamper through the meſhes of the decidua, travel through the fallopian tubes, and ſeek refuge and protection in the ovaria. I have thus offered a conjecture, at leaſt as plauſible as Dr. H.'s, to help him out of his difficulty; if he will not ſupport it, it is not my fault.

I am, Dear Sir, Yours,
With reſpect,
WILLIAM P. DEWEES.

Dr. John Redman Coxe.

Obſervations on the Cauſe and Cure of the Hemorrhagic State of Fever. By ELIJAH GRIFFITHS, M. D. *Read before the Medical Lycæum of Philadelphia. April 2d*, 1806.

MR. PRESIDENT, AND GENTLEMEN OF THE LYCÆUM,

THE ſubjects I have choſen for my eſſay, are ſome obſervations on the cauſe, and cure of the hemorrhagic ſtate of fever.

I believe, with the celebrated Ruſh, that the cauſe of hemorrhagy, is to be ſought for, in an increaſed action of the arteries; but that action is ſometimes ſo partial, as to ſcarcely ſhew any trace of general indiſpoſition. This is alſo the caſe in ſeveral other affections, that are called local; but which, unequivocally, reſult from increaſed arterial action; as in the commencement of phlegmonous inflammation, ſchirri, glandular ſwellings, ſome affections of the liver, &c.

The parts moſt liable to hemorrhagy, are, the nares, lungs, and uterus; perhaps the great vaſcularity, little lateral ſupport, and delicate covering to the veſſels of theſe parts, may be cauſes, why increaſed action of the veſſels here, is attended with rupture, inſtead of ordinary inflammation.

Blood loſt from the pulmonary veſſels, is very florid, coagulates ſoon, and from the great quantity, at times, diſcharged in a few minutes, I think it evidently arterial. Although the blood, in uterine hemorrhagy, comes from ruptured arteries, little difficulty will attend diſtinguiſhing it from the catamenia; which in healthy women is florid, preſerves its fluidity, and does not take on the putrefactive proceſs as ſoon as other

blood. It is moſt likely freer from lymph, and ſecreted by the ſame veſſels, which by a weaker action ſecrete the fluor albus; as this often precedes and follows the menſes.* The above obſervations, preclude the neceſſity of deſcribing diſeaſed evacuations from the uterus, and vagina: I may juſt add, that women of a delicate make, ſubject to dyſpepſia, conſtipation, and nervous diſorders, are very liable to uterine hemorrhagy.

We come now to make ſome obſervations, relative to that action of the blood-veſſels, on their contents, moſt favourable to maintaining the hemorrhagy when once eſtabliſhed.

As far as my own obſervations in this diſorder have gone, blood drawn from a vein early in the complaint, is very fluid, coagulates ſlowly, and conſequently exhibits a buffy ſurface. I hope preſently to ſhow, that this condition of the blood is cauſed by too much action in the arterial ſyſtem, and has been juſtly referred to an inflammatory diatheſis, ſo highly favourable to continuing hemorrhagy when once begun.

In Mr. Hewſon's experimental inquiries into the properties of the blood, many valuable obſervations are to be found on this ſubject: Vol. I. p. 61: he mentions that portions of the firſt and laſt drawn blood of a ſlaughtered animal, were received into ſeparate veſſels, when the laſt portions coagulated before the firſt.

The above experiment is by no means ſolitary, but has been repeated by the ſame gentleman, with a ſimilar reſult; and in-

* I have a patient now under my care, who has had a very copious flow of the fluor albus, for three or four months paſt, at the proper period of the menſes; but in no wiſe diſcoloured. She thinks it equal in quantity to the catamenia, and it preſerves its times of coming on, and going off, exactly as that evacuation did.

conteſtably proves, that the ſlow, or quick coagulation of the blood, is to be referred to the action of the heart and arteries, before it eſcaped from them; and that in animals almoſt bled to death, or near to ſyncope, the blood coagulates immediately after extravaſation.

If then the cauſe and continuance of hemorrhagy, is the effect of unequal and exceſſive action in the arterial ſyſtem, thereby giving more than uſual impetus, and highly attenuating the blood; the remedies are plainly ſuch as will diminiſh and equalize arterial action, viz.

1ſt. Blood-letting. This diminiſhes the quantity and impetus of the blood; it cauſes the action of contraction, in the blood-veſſels; and if carried to the proper extent, induces debility in the ſanguiferous ſyſtem, and a ſtrong diſpoſition to ſyncope; which favours the quick coagulation of the blood, and the formation of a clot in the mouth of the ruptured veſſel. Laſtly, veneſection by ſuddenly inducing general direct debility, and conſequent excitability, increaſes general, at the expenſe of local excitement.

We muſt however acknowledge, that there are ſome debilitated perſons labouring under this diſorder, in whom the functions of life are ſo proſtrated, as to forbid the uſe of the lancet; but this is no objection to the principle above ſtated, for we are acquainted with many other diſorders, accompanied by extreme general debility, where there is local increaſed action, till the laſt moments of life?

2d. The next claſs of remedies to be noticed are neutral ſalts. Among theſe ſaccharum ſaturni, and muriate of ſoda, have been the moſt popular. But how ſhall we explain the operation of medicines, when applied to one part, on remote parts of the body?

It will be proper in this place to make a few obſervations on the animal economy. I take it for granted, that the external ſkin, alimentary canal, and bronchial veſſels, are one extended ſurface; liable to take on aſſociated motions, from impreſſions made on any part of the nerves and blood-veſſels, ramifying theſe ſurfaces; theſe impreſſions may extend, not only to the ſanguiferous, and nervous ſyſtems, but to every part of the body, and have been termed ſympathy.

The doctrines of abſorption and ſympathy, both have their advocates. I ſhall leave this controverſy to the deciſion of future experiments, and proceed by a leſs intricate route, to the ultimate object of my eſſay. In the celebrated Mr. John Hunter's work on the blood, we find the following diſſection, which is quoted, becauſe I think it applicable, in the latter part of this eſſay.

Vol. I. p. 92—3. "Morgan, a houſe-painter, who had been paralytic in his hands and legs for a conſiderable time," came to his death by an accident. "On examining the body after death, the muſcles, particularly thoſe of the arms, had loſt their natural colour; but inſtead of being ligamentous and ſemi-tranſparent, as happens in common paralyſis, they were opaque, reſembling exactly, in appearance, parts ſteeped in a ſolution of Goulard's extract. From this caſe it appears that lead had been evidently carried along with the blood, even into the muſcles themſelves."

With a view to aſcertain what effects the exhibition of neutral ſalts would have on the blood, while circulating, I made the following experiments, in the preſence of ſeveral gentlemen, members of the ſociety, who aſſiſted me.

CASE I.

January 25, 1806, at 5 o'Clock, P. M.—J. L. a middle aged man was bled to ℥ iv. at the arm; ten minutes after he took muriate of ſoda ʒ ii. The blood ſhewed abundance of lymph and was coagulated very ſlightly at ſix o'clock P. M. when ℥ vi. more of blood were taken from the ſame orifice; the laſt portion began to coagulate in 5 minutes, and in eight minutes, was more complete than the firſt drawn portion, and without ſize.

CASE II.

January 25, 1806, at 4 o'Clock, P. M.—G. D. middle age, was bled to ℥ v: coagulation commenced in ten minutes with a ſeparation of much lymph. Fifteen minutes after being bled, he took ſaccharum ſaturni, gr xv. with ſugar and water. At half paſt 5 o'Clock, P. M. he loſt by the ſame orifice ℥ vi. of blood, which coagulated in 5 minutes, with very little ſeparation of lymph on the ſurface.

CASE III.

January 25, 1806, at a quarter paſt 4 o'Clock, P. M.—J. S. aged 35 years, loſt ℥ v. of blood from his arm, which began to coagulate in twenty minutes, with abundant ſeparation of lymph. Ten minutes after the operation, he took carbonate of ſoda ℈ ii. diſſolved in water. One hour after the firſt operation, he loſt from the ſame orifice, ℥ vi. more of blood. This began to coagulate as ſoon as it fell into the cup, and in leſs than 5 minutes formed a conſiſtent maſs, without any ſeparation of parts.

In every caſe we opened the vein as quick as poſſible, after applying the ligature, to avoid the effect on coagulation, of the blood's ſtagnating in the veſſels.

The above perſons were neither in good health, nor ſeriouſly indiſpoſed, at the time of bleeding them; but each of them had a tenſe, and rather full pulſe, at the firſt bleeding, which was ſomewhat reduced at the time of the ſecond.

On looking over Mr. Hewſon's work on the blood, ſince making the above experiments, I have ſeen ſome obſervations that have rendered it doubtful, whether the changes in the blood might not be owing to the bleeding, rather than the medicines. This determined me to teſt them, by the following experiments.

CASE IV.

February 23, 1806, 20 minutes before 4 o'clock, P. M.—B. W. aged 41 years, pulſe 76 and full, loſt ℥ vi. of blood from his right arm. The blood began to coagulate in 15 minutes and was very ſizy. Ten minutes after being bled, he took muriate of ſoda ʒ ii. Twenty minutes before 5 o'Clock, P. M. pulſe 76 in a minute and rather ſmaller; he loſt from the left arm ℥ vi. more of blood, which began to coagulate in 4 minutes without any ſizy appearance.

CASE V.

February 23, 1806, 15 minutes before 4 o'clock, P. M.—I. W. aged 45 years, pulſe 76 in a minute, was bled to ℥ iv. The blood began to coagulate in 15 minutes, but ſhowed very little ſize. At 5 o'clock, P. M. pulſe 70 ſtrokes in a minute: this perſon loſt ℥ v. of blood from his other arm, which began to coagulate in 12 minutes without any appearance of ſize.

CASE VI.

February 23, 1806, at 4 o'clock, P. M.—D. R. aged 49, pulſe beat 60 ſtrokes in a minute, loſt ℥ v. of blood from the left arm, which began to coagulate in 15 minutes, with very

little ſize. Ten minutes after the operation he took carbonate of ſoda ʒ ſs diſſolved in water. At 7 minutes paſt 5 P. M. pulſe 66 in a minute, he loſt from the right arm, ℥ v. of blood, which coagulated in ten minutes, without ſize.

CASE VII.

February 23, 1806, G. D. aged 34 years, pulſe 66 in a minute, at 10 minutes paſt 4 o'clock, P. M. was bled to ℥ vi. from his right arm. The blood began to coagulate in 15 minutes, but had little ſize on it.

At 13 minutes after 5 o'clock, P. M. pulſe 66 in a minute, he loſt from his left arm, ℥ vi. of blood, which began to coagulate in 13 minutes and was very ſizy.

CASE VIII.

March 9, 1806, 42 minutes after 3 o'clock, P. M.—D R. aged 49, pulſe 75 ſtrokes in a minute, was bled to ℥ v. from the right arm. The blood began to coagulate in 15 minutes, ſizy. Twenty-five minutes after 4 o'clock he took ſaccharum ſaturni ϑ i diſſolved in ſweetened water.

Seven minutes before 5 o'clock, P. M. ℥ v. more of blood were taken from the left arm, which began to coagulate in 17 minutes, more ſizy and firmly than the firſt portion.

CASE IX.

March 9, 1806, at 13 minutes paſt 4 o'clock, P. M.—G. D. aged 37 years; pulſe 78 ſtrokes in a minute, loſt ℥ v. of blood from the right arm; which began to coagulate in 10 minutes, ſizy.

Twenty minutes paſt 5, P. M. pulſe as before, loſt ℥ v. blood from the left arm; which began to coagulate in 15 minutes, more ſizy than the firſt portion.

CASE X.

March 9, 1806. P. C. aged 63 years, pulſe 80 in a minute and tenſe; complains of a catarrh. Was bled from his right arm to ℥ v. ten minutes before 4 o'clock, P. M. In twenty minutes he took carbonate of ſoda ʒ iſs. The blood began to coagulate in 35 minutes, and was very ſizy.

Fifteen minutes before 5 o'clock, P. M. ℥ v. of blood were taken from his left arm; pulſe 80 in a minute. The blood coagulated in fourteen minutes with very little ſize, and not ſo firm as the former portion.

CASE XI.

March 9, 1806. A. B. aged 46, pulſe 80 ſtrokes in a minute and a little tenſe; at 4 o'clock, P. M. loſt ℥ v. of blood from his right arm, which coagulated in twenty-five minutes, very ſizy.

At five o'clock, P. M. pulſe 80, he loſt from the left arm, ℥v. of blood, which coagulated in 22 minutes, very ſizy.

Dr. Millar was preſent and aſſiſted me in the eight laſt experiments.

I think the foregoing experiments and obſervations will aſſiſt us in explaining the ſalutary operation of ſome of the neutral ſalts, on the heart and arteries, ſo as to favour the ceſſation of hemorrhagy.

If lead applied to the ſurface of the body, or lungs, as in the caſe of Morgan the houſe-painter, mentioned by Mr. Hunter, is capable of paralyſing a muſcle in the living body; we can hardly

heſitate to believe, that the ſame ſubſtance can exert a debilitating influence over the muſcular fibres of the heart and arteries, either direct or indirect.

Neither can we admit, that there exiſts any medium, through which lead can exert an influence over different parts of the body, that is not alike free for other active medicinal ſubſtances to exert their influence through.

That muriate and carbonate of ſoda, have a more decided operation on the heart and arteries, when taken into the ſtomach, than lead, is fully proven by the above experiments; and that the variety of appearances in blood, taken from the ſame individual, is to be referred to the mode of action in the blood-veſſels, before it eſcaped from them, is ſatisfactorily eſtabliſhed by Mr. Hewſon's experiments on the blood of ſlaughtered animals.

Many reſpectable gentlemen are of opinion, that the good effects from ſaline medicines in hemorrhagy, are to be aſcribed to their producing a nauſea at ſtomach, which is ſuppoſed to influence arterial action; but I hope ſoon to bring ſome circumſtances into view, that will render this opinion very queſtionable.

Mrs. F. about 30 years of age, the mother of ſeveral children, is of a very ſpare habit, ſubject to flatulency, depreſſion of ſpirits, &c. was taken with hemoptoe in October, 1805. The diſcharge was ſmall and ſoon over, but recurred at irregular periods, once or twice in 24 hours. She was free from cough, but complained a little of an unſettled pain, under and between the ſcapulæ. The pulſe was ſmall, weak, and frequent; tongue and ſkin natural. The menſes appeared at the uſual time, and the patient, with the above exceptions, was in the enjoyment of her ordinary health. Saccharum ſaturni was directed in ſmall

and repeated doſes, and continued for ſeveral days; but the complaint growing rather worſe, a large bliſter was applied to the breaſt, and the medicine increaſed to gr v. as often as the diſcharge of blood recurred. While the bliſter continued very ſore, and diſcharged freely, the hemorrhage was leſs, but immediately grew worſe on its drying up. Bliſters were now applied to the wriſts; theſe had a ſimilar effect as the firſt; but it was equally temporary, for on their healing the diſorder became greatly aggravated, and the patient would loſe in a very few minutes ℥ iii. or iv. of blood. The ſaccharum ſaturni was increaſed to gr viii. at a doſe; four or five of theſe doſes were taken in the 24 hours, and perſiſted in for two days, without preventing a return of the hemorrhage. Deſpairing of curing my patient with this medicine, carbonate of ſoda ℥ ſs. was diſſolved in half a pint of water, and a table-ſpoonful given every two hours; ſince that time there has not been the leaſt return of hemorrhagy. One ounce and a half of the medicine was taken in this way, when the ſoda and Peruvian bark were taken in combination, with much benefit to the patient. On the ſecond viſit after giving the ſoda, I found the pulſe ſlower and fuller; this was an increaſe of healthy general action, at the expenſe of local morbid action. Peruvian bark was adminiſtered at two different periods of the diſorder, with this intention, but had to be immediately relinquiſhed on account of its bad effects. No bad conſequences have reſulted from the lead, although between two and three drachms were uſed. The ſoda in this caſe produced not the leaſt nauſea, but on the contrary, removed the flatulency, and improved the appetite.

What I wiſh to offer in this place, is, that medicines given in doſes far ſhort of nauſea, produce their good effects, by an impreſſion made on the arterial and nervous ſyſtems; and it is only when they are given in larger quantities, that we witneſs a ſick ſtomach as a conſequence, and not a cauſe of the change in arterial action; it may be conſidered as a ſymptom, denot-

ing the ſtrong impreſſion our medicine has made on the blood-veſſels and nerves. I may further obſerve, that a univerſal languor, ſenſe of debility, and paleneſs, precede the operation of emetics; which makes it probable, that the medicine acts primarily on the arterial ſyſtem, through that infinite number of blood-veſſels, ſpread on the inner ſurface of the ſtomach, and then, through the nerves, the muſcular fibres of the ſtomach and diaphragm are thrown into convulſive action. If this be puſhed too far, it is no uncommon thing to ſee convulſions take place, in other parts of the nervous ſyſtem.

In ſupport of the above opinion, I may obſerve, that large bleeding, the application of tobacco to the ſurface of the body, certain paſſions and emotions of the mind, diſguſting ſights, &c. will all, at times, produce ſickneſs at ſtomach, and vomiting. None of theſe operate primarily on the ſtomach, but through the blood-veſſels or nerves; even vomiting produced by tickling the fauces, acts through the medium of ſenſibility, which is an attribute of the nerves.

From the above view of this ſubject, we can account for the ſalutary effect of a ſea-faring life, on a patient labouring under hemoptyſis, mentioned in Doctor Moſely's works; I mean the application of muriate of ſoda, to the ſurface of the body, and to the organs of reſpiration, for here was a ſurface for the medicine to act on, co-extenſive with Mr. Hunter's paralytic painter, whoſe muſcles exhibited ſuch ſtriking traces of the agent by which they were injured. It will not be contended in this caſe, that the ſaline particles were not applied, for I have found them depoſited on vegetables, at a very conſiderable diſtance from the ſea ſide, even when the weather was by no means tempeſtuous.

I have heard emetic medicines highly commended in this complaint, eſpecially in uterine hemorrhagy, but can ſay nothing on the ſubject from experience.

Cold has been uſed with great benefit in ſome urgent caſes of hemorrhage; in the form of cool air, cold water, vinegar, &c.

Reſt of body and mind ought to be obſerved, and if any exerciſe is permitted, it ſhould be very gentle at firſt.

Hemorrhagies ſometimes occur in the advanced ſtages of malignant fever. In theſe caſes there is a fault in the veſſels and their contents, the former become feeble, relaxed, and unfit to retain blood in its moſt healthy ſtate, much leſs, diſſolved incoagulable blood, which is often the ſtate of that fluid in malignant fever. Medicine can be of little uſe here, for if we can even arreſt the hemorrhagy, ſtill our patient is in a very hopeleſs condition; the only effective plan muſt be referred to prophylactics, or the ſucceſsful treatment of the firſt ſtages of the diſorder.

Obſervations on the Uſe of Arſenic. *By* JOHN REDMAN COXE, M. D. *Read before the Medical Lycæum of Philadelphia, January 30th,* 1806.

GENTLEMEN,

THE following obſervations on the uſe of arſenic in the cure of diſeaſes, being chiefly of a practical nature, will not admit of that extenſive diſcuſſion ſo favourable to the intereſts of our ſociety; yet I hope they will prove of ſufficient importance to merit your attention to them.

The value of arſenic in the Materia Medica, does not appear to me to have been ſufficiently appreciated, although its ſafety has been long ſince eſtabliſhed by Dr. Fowler and other reſpectable practitioners. The terror of its name as a poiſon, is

perhaps the chief reaſon which can be aſſigned for its neglect; as I believe very few, if any, after giving it a fair trial, have ever rejected it from the catalogue of their moſt efficacious remedies. It is to be hoped, the following remarks will tend to remove any prejudices againſt its uſe; and that in future it will be more extenſively employed for the benefit of our patients, and of ourſelves.

The ſafety of arſenic will perhaps be beſt deduced, by a ſhort account of its exhibition in ſome few caſes, particularly in one, in which it was carried to an extent, both in time and quantity, not often known, and apparently with the beſt effects. This caſe, which I ſhall firſt detail, is that of a lady, who, for eight or ten years, had laboured under a leprous affection, which commenced about the fourteenth year, and was chiefly confined to the head, the body and upper parts of the arms. A variety of medicines had been exhibited both internally and externally, with but little effect. She applied for my advice in this complaint, in October 1802. She was alſo afflicted with a ſevere periodical headach about once in three weeks, to which ſhe had been ſubject for ſome years. At firſt I determined to try the efficacy of mercury with an intention of keeping her mouth ſore for a conſiderable time, and with this view I exhibited the mercurial pill, and employed externally a lotion of corroſive ſublimate. To this, I added the frequent uſe of the warm bath, and paid particular attention to the head, by having the hair conſtantly cut cloſe, and uſing daily a ſtrong lather of ſoap, together with friction with a piece of flannel. I continued this for nearly two months; the medicine exciting only a diſagreeable taſte in the mouth; but finding no advantage from it, I commenced the uſe of Fowler's ſolution of arſenic in doſes of 20 drops thrice a-day, and an ointment of corroſive ſublimate, and white oxide of mercury. The ſolution was increaſed to the amount of 50 drops, three times a-day in the ſpace of ſix weeks, at which doſes ſhe perſevered for ſeveral weeks, and at one time, for a pe-

riod of about three weeks, augmented it to 60 drops each doſe, which at laſt ſhe did not take the trouble to drop, but poured into a tea-ſpoon. This doſe, however, ſoon diſagreed with her, and ſhe found ſhe could not exceed the 50 drops even one drop in the doſe, without perceiving the unpleaſant effect of the medicine, viz. tumefaction of the face, nauſea and loſs of appetite, and a peculiar fulneſs of the eyes and giddineſs, which all indicated the propriety of diſcontinuing it for a time. The effect of the medicine on the complaint, was, however, rapid and ſurpriſing. In the courſe of a few weeks it had entirely diſappeared, and continued abſent for ſome time after the diſcontinuance of the remedy in conſequence of the ſymptoms above mentioned. The remedy had nevertheleſs been perſevered in the greateſt part of a year, with only the occaſional intermiſſion of a-day or two. At length the diſeaſe began to re-appear, but leſs extended, and the arſenic was again reſumed, in ſmall doſes, and with a ſimilar reſult as to its efficacy; and thus it continued diminiſhing under its uſe, and returning when omitted, during a period of nearly two and an half years. She has omitted the medicine entirely ſince laſt Auguſt, at which period, from her firſt employing it, ſhe had taken between a quart and three pints of it. My only rule in uſing it, was to continue it till the above-mentioned ſymptoms pointed out the propriety of omitting it. One curious circumſtance in the caſe is, that although at one time ſhe took 180 drops daily, or one grain and an half, yet, ultimately, ſhe could not bear more than five drops three times a-day, without in a few days feeling thoſe indicative ſymptoms of its noxious effects on the ſyſtem. This is, I believe, uncommon in the adminiſtration of any medicine; which we are obliged to augment in proportion as the ſyſtem becomes habituated to its uſe.

The check the complaint received in the firſt inſtance, and the immediate recurrence to the medicine on its re-appearance, ſeemed at length to induce ſuch a favourable change in the con-

ſtitution, that it entirely ceaſed on the body and arms, and was confined to the head, and that in a very ſmall degree. At preſent, after a lapſe of five months, the whole amount of the complaint in detached ſpots, does not equal the ſize of a dollar. I have purpoſely omitted the further uſe of the remedy till the ſyſtem may be fairly ſuppoſed to be entirely recovered from its influence; but I entertain the moſt ſanguine expectations, that eventually it will completely eradicate every diſpoſition to the recurrence of the diſeaſe.

One proof of its powerful influence, is, that the headach, which ſo ſeverely tormented her every three weeks, does not now occur more than once in ſix months, and that by no means ſo ſeverely as formerly: her whole appearance is more healthy, and her hair, which before grew thin and weak, is now greatly ſtrengthened and much improved, though this effect may alſo be in part owing to the frequent cutting, &c.

This caſe has completely convinced me of the ſafety of the medicine, both as to time and quantity. Its utility is well ſubſtantiated by Dr. Otto of this city, in a paper publiſhed in the Philadelphia Medical Muſeum, to which I muſt refer, as well worthy your attentive peruſal.

In the cure of intermittents, this invaluable medicine ſtands unrivalled. Even the bark in my opinion does not equal it: and indeed many caſes occur in which it is impoſſible to adminiſter the bark in ſufficient quantity, to produce the deſired effect, as in children; whilſt a few drops of the ſolution are adequate to the reſtoration of health in a few days. I have given it to ſeveral, of two, three, and four years of age, in ſome of whom the diſeaſe had continued three and four months, and was accompanied with enlarged livers, bloated appearance, &c. and always with the happieſt reſult.

To women with child, it alſo affords an invaluable and ſafe reſort in the cure of intermittents at all periods of pregnancy, whilſt the bark can rarely be adminiſtered, either from inability to retain it on the ſtomach, or from its being altogether improper at this intereſting period. I once adminiſtered it to a lady in her ſeventh month, in whom a moſt violent tertian threatened abortion. She was once bled, and after the ſecond paroxyſm commenced the uſe of the ſolution, in doſes of eight drops, three times a-day. The third fit was diminiſhed, and the fourth entirely ſuſpended, when elixir of vitriol and an infuſion of quaſſia completed her recovery. She went her full time, and was ſafely delivered of a remarkably fine child.

Theſe facts eſtabliſh the importance of this medicine, eſpecially in an intermittent country, where the high price of the bark, and the difficulty at times of procuring it, are inſuperable difficulties to its general uſe among the poorer claſſes of ſociety.

Of its utility in cancerous complaints I ſhall not ſpeak, although we have abundant reaſon to conſider it as the baſis of all the cancer powders, which at various times have been celebrated for its cure, although declared to be of vegetable origin.

I have lately been informed by a medical friend that he had found it very beneficial in two caſes of yaws; and when it is recollected that arſenic forms the baſis of the medicine ſo effectual for the cure of elephantiaſis, in the Eaſt Indies, we may reaſonably hope that it may prove equally efficacious in a diſeaſe probably a-kin to it.

I need not detain you with ſpeaking further of its uſe in many other diſeaſes, but ſhall merely ſtate my reaſons for preferring the ſolution to the arſenic in ſubſtance. Theſe are, firſt, that it is more uniform than any other preparation, and, ſecond-

ly, because in this form it is to be viewed somewhat in the light of a neutral metallic salt, composed of the arsenious acid, and potass, (or an arsenite of potass,) which may reasonably be supposed a milder medicine than the white arsenic, or, as it is in fact, the arsenious acid. I may remark here, the peculiarity attending the union of two bodies, in themselves inert, (I mean oxygen and arsenic, for in its metallic state it is so said to be) in forming one of the most active medicines and poisons, with which we are acquainted. So also is the union of quicksilver and muriatic acid, in the formation of corrosive sublimate; as a medicine equally to be regarded, and as a poison, to be dreaded, with the compound we have been considering.

As to the modus operandi of this remedy, I shall not pretend to attempt an explanation. This, with many other points, it is not possible perhaps for our limited faculties to arrive at. That it is a tonic, its general effects in removing intermittents sufficiently evince. That it is a stimulant, somewhat analogous to the tincture of cantharides, the following curious fact will perhaps render probable.

For several years I have been accustomed to employ the solution in the summer months, for the destruction of flies: 20 or 30 drops in about ℥i. of water placed in a saucer, being adequate to this purpose. The aromatic smell of the lavender, probably entices them to taste it; and in a few minutes it appears to excite an uncommon torpor in their system, which allows them to be pushed about, without any attempt to escape, and in a short time they die without much apparent pain. Previous, however, to the torpor preceding the last moments of expiring life, an uncommon propensity to the venereal orgasm seems to be excited; for I have so repeatedly found them uniting in coition at this period, that I cannot doubt it being the effect of the arsenic; and in this actual state of union they often die, as the torpor soon ensues which prevents their separation, and which precedes death but a short time.

I have thus, gentlemen, by a short detail of facts endeavoured to draw your attention to the more general and extended employment of a medicine, which is a very favourite one with me, and which, I cannot but regard, as one of the most important in the Materia Medica; hoping that in your hands it may prove serviceable to thousands; and confident, that it requires but a few trials, to make you as partial to it, as I am myself.

JOHN REDMAN COXE.

Philadelphia, January 30th, 1806.

On the Utility of Spirit of Turpentine in a severe Burn; and an Account of an extraordinary Instance of the late Commencement of the Catamenia. *By* DR. T. WATKINS.

Havre-de-Grace, 7th March, 1806.

DEAR SIR,

IF you think the following cases of importance sufficient to deserve a place in your useful Museum, by inserting them you will gratify,

Your friend and well-wisher.

T. WATKINS.

DR. J. R. COXE.

SOME time in January, I was requested to visit a child, who had suffered the most distressing accident from a burn, that I ever witnessed. Being unfortunately from home, at the time the accident occurred, it was not until 24 hours afterwards, that I saw the child. He was between three and four years old, and playing too near the fire, his clothes caught it and

were entirely conſumed, before any perſon could come to his relief. His face, mouth, and ears were *parched* perfectly *criſp*; his arm-pits, arms and the fingers of one hand were in the ſame ſituation; and his breaſt, from the neck to the bottom of the ſternum, one entire ſore; his abdomen and lower extremities ſuffered but little injury, nor was his back at all burned. Nothing had been done but to give him a few drops of laudanum, and to cover the whole extent of the burn with dry cotton: upon the removal of this, I could perceive no inflammation, except on the breaſt where the burn was encloſed in a ſlight circle of redneſs. I ordered the turpentine liniment (recommended in your firſt Volume, and which I have always kept prepared) to be immediately applied to the whole injured ſurface; and as there was not the ſlighteſt appearance of fever, I conſented that his doſe of laudanum ſhould be repeated. As his fauces were conſiderably ſwelled, I ſuſpected that by the inhalation of the flames in crying, they had been burned internally, which upon inſpection I found to be the caſe; to relieve this, I directed that he ſhould hold in his mouth ſtrong ſpirits and water, as long as he could bear it, and repeat it three or four times a day. On the next day, as he had had no motion ſince the accident, he was ordered a gentle cathartic of ſulphur and cream of tartar, and the liniment was ordered to be repeated twice daily. Still no ſymptoms of fever and he appeared to be doing well. On the 3d and 4th days the dreſſings were repeated. He complained but little and appeared much inclined to ſleep. On the 5th day, as his parents deſpaired of his recovery, and indeed every moment expected his death, they omitted to apply the liniment, and when I ſaw him on the 6th, the whole wound had aſſumed a gangrenous appearance. I attributed this to the neglect of the preſcribed dreſſings, and requeſted that they would inſtantly apply bread and milk poultices, and renew them four or five times in the 24 hours. The effect of theſe is almoſt inconceivable, for when I ſaw him at the ſame hour on the next day, the wounds had recovered a healthy appear-

ance, and I again begged their ſtrict attention to the application of the liniment; this was continued for a few days longer, when I was compelled to leave home, and on my return a month afterwards, the child had perfectly recovered. I have had ſeveral opportunities of recommending this liniment in burns of leſs conſequence, with the moſt aſtoniſhing good effects.

During my viſit to a neighbouring county, I was requeſted to ſee a married lady, aged 42, who had been for ſome days complaining of headach, nauſea, pain about the loins, and all the ſymptoms of ſuppreſſed menſtruation. To a lady of her age I was aſtoniſhed that ſuch ſymptoms ſhould give any uneaſineſs, and expreſſed my ſurpriſe accordingly. She told me ſhe ſaw I laboured under a miſtake, which ſhe ſhould be compelled to rectify, however reluctantly; that ſhe had *never menſtruated*, nor had ſhe ever before felt the ſlighteſt ſymptom of any indiſpoſition attendant thereon; and that, therefore, ſhe was alarmed, being conſcious that the ſymptoms ſhe now laboured under, could not be the conſequence of *irregularities* in that way. You may judge of my ſurpriſe at her recital; I reflected that ſhe had arrived at that period of life, when many women *ceaſe* to menſtruate, and could not help entertaining a conjecture, that nature meant to renew her youth by bringing on her, thoſe inconveniences at the moment ſhe ought to have been freed from them. I bled her, requeſted her to take ſome mild cathartic, and took my leave. I viſited her again the next day, and to my no ſmall ſatisfaction as well as ſurpriſe, ſhe told me that the menſes were then on her, that ſhe felt relieved the moment they began to flow, and had continued ſo. The caſe was ſo extraordinary that I could form no comments on it and left her, apparently much pleaſed with her new viſitor.

Account of the ſingular Effects from the Bite of a Rattle-ſnake. By Dr. S. T. Barstow, *Member of the Philadelphia Medical Society.*

Wilkeſbarre, May 27th, 1806.

Dear Sir,

I HOPE you will pardon the liberty I have taken in thus addreſſing you; and if you deem the following hiſtory of a ſingular caſe, worth publiſhing, you may rely on its authenticity. It can be well atteſted.

Some time in the ſummer of 1801, the wife of Mr. Alfred Beeman, in the town of Braintrim, Luzerne county, Pennſylvania, was bitten by a rattle-ſnake: ſhe was then in the fourth or fifth month of pregnancy. After ſome conſiderable degree of the common conſequences of ſuch an accident had occurred, ſhe at length recovered; at the full time of delivery ſhe was ſafely put to bed. The child was apparently healthy; but immediately after allowing it to ſuck, it aſſumed the hues of a rattle-ſnake, ſwelled very much, and ſoon died. She then procured a puppy, which died in two days of the ſame ſymptoms. A lamb was tried next, and in ſucceſſion, one puppy and three lambs ſhared the ſame fate. Another puppy was procured, which diſcovered but little of the ſymptoms, and did not die. The woman all this time was as well as uſual, under a convaleſcence from child-birth. In the ſpring of 1803, I was called to ſee Mrs. Beeman, ſoon after another birth. She had ſtrong apprehenſions that it would be unſafe to put her child to the breaſt, but was prevailed on to make the experiment, and no diſagreeable conſequences reſulted. I had loſt a part of the circumſtances of this ſtrange fact, ſo that I could not communicate it during my reſidence in your city, the laſt winter. I have now obtained a repetition of them, not only from Mr. Beeman and

his wife, but from ſeveral perſons of veracity beſides. Among theſe is H. V. Champins, Eſq. on whoſe teſtimony I can fully rely, and who has authorized me to uſe his name in this place.

I am, Sir, very reſpectfully,

Your obedient and humble ſervant,

S. T. BARSTOW.

DR. J. R. COXE.

A ſingular Caſe of Abſceſs. *By* DR. CHARLES SMITH.

New Brunſwick, (N. J.) March 7, 1806.

I WAS called on a few days ſince to viſit the infant child of Mr. W. Thrackmorton, of Spottſwood, which was reported to have an abſceſs formed on its back, which required opening. A few minutes before my arrival, Mrs. Thrackmorton, on examining the tumour, perceived ſomething like a ſharp point diſtending the ſkin from within, which induced her to touch the part with a needle, on which nearly a tea-cupful of pus ruſhed out; on wiping away the matter, a ſharp point was ſeen to protrude from the orifice of the abſceſs, which was taken hold of and withdrawn, and proved to be a head of rye without the grain, with nearly all the ſpiculæ or beards entire, and about half an inch of the ſtem or ſtraw: this was performed in the preſence of Mrs. Perrine and Miſs Gordon the nurſe. I meaſured this head of rye, while wet with matter, and found it to be rather more than four inches and three quarters long. The

abſceſs was ſituated about an inch and a half, or two inches on the right ſide of the ſpine in the lumbar region. The above caſe appears as ſingular as any which has hitherto fallen under my obſervation. Is it poſſible that this extraneous body could have been ſwallowed, or otherwiſe have entered the body of this child unleſs by deſign? I judge not. Indeed I do not think it could have been introduced into the ſtomach in any way, without extreme diſtreſs, if not immediate ſuffocation. The only ſolution of the phenomenon which preſents itſelf to me is, that it muſt have been introduced into the rectum, with a deſign to deſtroy the child. A female ſervant of the family, of a malignant diſpoſition, is ſuſpected of having committed this crime four weeks before my viſit; this ſervant had the care of the child for a few hours only: from this time it became reſtleſs and uneaſy, and continued to diſcover ſymptoms of great diſtreſs, until the offending cauſe was removed. I examined the abſceſs, and diſcovered the ſinus to be very deep and evidently leading into the cavity of the abdomen.

CHARLES SMITH.

DR. J. R. COXE.

Caſe of Epilepſy relieved by Acetate of Lead;—and of a diſeaſed Eye.
By DR. H. JAMESON.

Gettysburgh, March 6th, 1806.

DEAR SIR,

I SUBMIT to your better judgment, whether the two following caſes of diſeaſe are worth a place in your Muſeum: leaving you perfectly at liberty to publiſh, or ſuppreſs them; I proceed to relate,

A Caſe of Epilepſy, which was conſiderably checked by the Uſe of Acetate of Lead.

Peter Moon, of Lancaſter county, applied to me for a caſe of epilepſy, in the fall of 1802; he remained in my care till Auguſt, 1803: during this time, he underwent a ſevere ſalivation from mercury; took the cupr. ammoniacum, &c. &c. all to no purpoſe. Having been attacked with the complaint after manhood, I ſtill entertained hopes that ſomething might be done, to relieve him from ſo wretched a diſeaſe; I therefore ſent him to Doctor Ruſh, for his opinion; who kindly condeſcended to inform me, that he had cured epilepſy with the fac. ſaturn. and recommended it in this caſe; I accordingly began with it in ſmall doſes, and increaſed it gradually to eight grains per day, without inconvenience to my patient. The patient expected to have his fate preſaged by Dr. Ruſh, and on finding that I promiſed him no certainties, but ſtated fairly to him, what the doctor had written me, he was not much delighted with the proſpect; however, he put himſelf under my care, and took the medicines as above ſtated, for three weeks, during which time he had a moſt violent fit, which altogether diſcouraged him. A blackſmith about this time, was famed for having effected, as was ſuppoſed, ſome cures; and holding out a certain cure to this young man, he deſerted me and became the patient of the ſmith, who, with great formality, put an iron ring on his wriſt, to the unſpeakable happineſs of the patient: he had no fit afterwards for four months, although he formerly had them every two, three, or four weeks. I left Lancaſter county ſhortly afterwards, and therefore know not how the caſe ended. The above caſe needs little comment; he took no medicine but the ſugar of lead; he went right away from me to the ſmith; there was an interval of four months; and as to the return, what was more likely to act as an exciting cauſe of his diſeaſe, than exceſſive labour? He had undertaken to clear a piece of land by the job, and worked very had for many days before the fits return-

ed; and luckily for the ſmith and ſuperſtition, the patient had taken off the ring that very day, before the fits returned, in conſequence of its being inconvenient, and ſuppoſing himſelf cured. To me there is no kind of doubt, but the ſac. ſaturn. poſtponed the diſeaſe the above length of time, and that it would have effected a cure.

Caſe of diſeaſed human Eye, in which a hard Subſtance was got.

I WAS called to ſee Mrs. Ahey, of Lancaſter county, in 1803. She was labouring under a hectic fever and excruciating pain in her left eye, which was grown to nearly four times its natural ſize; the eyelids were ſtretched to the thinneſs of paper; the cornea was wholly obliterated; the whole eye had loſt its natural colour, being now of a blackiſh or dark brown colour; the tumour was yielding to the touch: I therefore thought an inciſion into the tumour would leſſen its ſize, by letting out a conſiderable quantity of a fluid, which I thought muſt be preſent from the feel of the part. Very little was diſcharged; but in making the inciſion, I cut upon a hard ſubſtance, which induced me to extirpate a conſiderable part of the eye or tumour. The operation was attended with great pain, but afforded great relief from pain afterwards; but the fever with which ſhe was affected, grew gradually worſe, and in about three months carried her off. On examining the part of the eye, which I had taken off, I found the whole cavity filled with a ſubſtance reſembling tar, in colour and conſiſtence, and within the poſterior chamber of the eye, I got a hard ſubſtance which I had ſince preſerved, and intended to have incloſed, but have unfortunately miſlaid it while writing this.* The patient informed me, that ſix years previous to my viſit, ſhe was

* Should the doctor be ſo fortunate as to find this ſubſtance, he will confer a great favour in tranſmitting it to the Editor.

ſtruck with a corn-ſtalk in loading fodder, that produced great pain and violent inflammation, but to her knowledge there was no opening into the eye; that the inflammation had yielded to common remedies which had been preſcribed by a phyſician in the neighbourhood; that crabs eyes were put into the eye to clear it of dirt. On examining the ſubſtance, I was decidedly of opinion, that it was a cruſtaceous animal which had grown in the eye; it appeared to be compoſed of irregularly triangular, hollow pieces of ſhells, joined together with a pretty firm ligament at each joint, which were cloſe together, large at one end and ſmaller at the other. It would probably have weighed about 15 grains, and moved freely in the way of a common hinge. Having been broken in the eye, I cannot be very poſitive in my opinion, of its being a peculiar piece of organization, or ſome part of a crab; but ſure I am, it was not a crab's eye: poſſibly a claw; if ſo, it was lodged ſix years within the eye. What muſt the patient have ſuffered? What do not mankind owe to ingenious gentlemen who perform ſuch cures as the worthy Dr. Phyſick has in the caſe of your little ſon? And what pain might this woman have eſcaped in the hands of that great man, on timely application?

With ſentiments of eſteem,

Your's, &c.

HORATIO G. JAMESON.

Dr. John Redman Coxe.

Remarks on Dr. Wendell's *Case of Worms; and on the Efficacy of Nitrate of Silver in Epilepsy. By* John Parker Gough, M. D.

Charleston, (S. C.) *May* 31*st*, 1806.

Dear Sir,

I HEREWITH transmit for your Museum, some *cursory remarks* upon Dr. Wendell's case of worms in the *bladder*, which appeared in your last number, and also an account of the efficacy of the nitrate of silver in a case of epilepsy. If you think these articles deserving a place in your useful work, they are at your service. Wishing you, sir, a continuance of that success which has crowned your exertions, I beg leave to subscribe myself,

Your's, with esteem,

JOHN PARKER GOUGH.

John Redman Coxe, M. D.

THE case related by Dr. Wendell, of *worms* being found in the *bladder*, is so singular, that it cannot but excite the attention of all who peruse your valuable and interesting publication. I confess that I was not a little surprised at so *uncommon* an occurrence; but the *more* I have reflected upon it, the *more* I am satisfied, that the Doctor is *mistaken in supposing those substances* which passed from the bladder *to be worms*.

As truth ought always to be the object of our researches, and it being only by a collision of sentiment, that we can arrive at any principles in science, I shall be excused for offering an opinion upon a *subject* that seems to be of some *practical* importance.

I shall not here notice the ingenuity of Dr. Wendell, in explaining the *manner* these substances got admission into the bladder; because, *it is difficult to conceive*, and indeed reason *rejects* the supposition, *that a living body could perforate the colon, and so sensible an organ as the kidney, without inducing consequences fatal to the patient, and that perhaps immediately.* Neither is it to be supposed, *even* admitting his explanation, *that a worm could so far change its nature and assimilate itself to its new element, as to exist for any length of time, in a saline, acrimonious fluid, like the urine.*

That these substances were not worms, I infer, first, from the consideration of their not being *possessed of life.* Dr. Wendell does not say that they were *alive* at the time of their extraction, and there is *no reason* to suppose they were so *in the bladder*, as the means by which they were drawn forth, *could not*, it is apprehended, have deprived them of existence. The circumstance of the patients being sensible of a "vermicular motion" in his bladder, is no objection to this opinion, because the contractile power of this organ, naturally great, acting on *elastic bodies*, as these substances are acknowledged to be, and stimulated by them into uniform and inordinate action, is sufficient of itself, it appears to me, to account for this extraordinary symptom.

Secondly. I am induced to believe that these substances were not worms, because, in *some* cases of *hematuria*, bodies have been occasionally voided from the bladder, bearing so strong a *similitude* to worms, as to be taken for them.

In this case we well know the deception arises from blood being deposited in the *ureters*, and by coagulation, acquiring the form of those vessels, and thereby creating the resemblance in question. This fact did not escape Dr. Cullen. In his "first lines" under the present article, he says "it sometimes also hap-

pens, that the blood *stagnating* and *coagulating* in the *ureters*, takes *the form of these vessels*, and is therefore voided under the *appearance of a worm*; and if the coagulated blood happens to have, as it may sometimes have, *the gluten separated from the red globules*, these *worm-like appearances* have their external surface *whitish*, and the whole seemingly forming a tube containing a red liquor."

Here then, we have a solution of this case, at least, this is the explanation I would offer; whether correct or not, I leave to others to determine. Mr. Delamatter had *probably* been the subject of *hematuria* at some time antecedent to this attack, or he might have been *occasionally* afflicted with *gravel*, which, in its passage through the *ureters*, may have *eroded* their surface, and the blood *effused in consequence*, laid the *foundation* of these worm-like appearances. The same effect may have been also produced by *some accident or violent exertion occasioning the rupture of a small blood-vessel in these parts*.

I am the more confirmed in the opinion *I have* endeavoured to support from this additional circumstance, that the *shape** of these *supposed* worms corresponds with that of the *ureters;* the diameters of which, if my memory serves me, are larger as they proceed from the *kidney* than near their insertion in the bladder. The exquisite pain, &c. which the patient felt in the *lumbar region*, was doubtless owing to *the passage* of these substances *from* the ureters *into* the bladder.

And indeed the symptoms in general described by the doctor, are by no means peculiar. They are the usual concomitants of affections of the *urinary system*, and *no more* happens here, than *commonly* takes place from the introduction of *any* extraneous body into the kidney or bladder, as in "Nephralgia Calculosa."

* Dr. Wendell in his description says, that one extremity of these substances was larger than the other.

P. S. Since writing the above, I recollect a caſe related by Dr. Barry in the ſixth volume of the Edinburgh Medical Eſſays, of a worm being paſſed from the bladder of a man labouring under *hematuria*. But the hiſtory of this caſe was *materially* different from the one before us. The worm was ſmall, and upon examination was found to have both mouth and eyes; and circumſtances too, rendered it highly probable, that it had formed a habitation for itſelf, *not in the bladder*, but in the *extremity* of a blood-veſſel; and that it derived its nouriſhment from *the blood* and the *blood only*. It is alſo probable that as ſoon as it found a paſſage into the bladder it ſuffered an extinction of life, for it was voided dead; the urine not being a fluid adapted to its nature.

Caſe of Epilepſy, cured by the Uſe of Argentum Nitratum.

Mary-Ann, a ſervant girl belonging to T—— L——'s, Eſq. between 17 and 18 years of age, apparently of a good habit of body, was placed under my care for this diſeaſe in the ſummer of 1803. Upon inquiring into the hiſtory of her caſe, I found that it had commenced with her periodical diſcharge about two years before; at which time ſhe was ſeized ſuddenly without any premonitory ſymptom, or evident exciting cauſe, and had been afflicted with it more or leſs ever ſince. During this term, ſhe *regularly* menſtruated, though not always ſufficient in quantity. It was obſerved, however, that no abatement of the violence of the fits was in conſequence perceptible; nor did this ſtate of her body ſeem to have any effect in lengthening the intervals between them.

This diſeaſe did not appear to obſerve any regularity in its attacks; for ſometimes ſhe would have it every four or five days, ſeveral times in ſucceſſion, and again ſhe would be free of

it for one or two weeks together. In other respects she enjoyed a good share of health with the exception of a pain in her head, which distressed her occasionally, leaving a sensation of fulness afterwards.

In order to remove the effects of a plethora under which she seemed to labour, and which is generally a predisponent cause of epilepsy, I bled her freely, and gave an emetic to cleanse the "primæ viæ." Her body was kept open by cathartics, and the regimen usual in such cases was pursued.

She was put upon the use of metallic tonics combined with bark, and ordered moderate exercise and a change of air. I also inserted a seton in her neck, which was kept running. Finding that this plan of treatment did not equal my expectations, I determined to make trial of the "argentum nitratum," which I knew had been favourably spoken of, and accordingly began with half a grain twice a day, in the form of pills, increasing the dose by degrees. The success of this experiment answered my most sanguine wishes. A fit, which she had a few days after this remedy had been adopted, was evidently shorter in its duration, and less violent in its effects. I now looked forward to a most happy result, nor was I disappointed in my expectations. She began to mend very fast; her fits were less frequent; the pain in her head, of which she complained so much, left her, and in a few weeks she was completely restored to health. The pills produced no other sensible effect than that of rendering her costive, which was obviated by the use of occasional doses of medicine.

She has never since had a return of her disease.

Extract from the Report of the Board of Health of Philadelphia, to GOVERNOR M'KEAN, *on the late Epidemic of that City; with Remarks on the ſame, by a Phyſician to the Southward. In a Letter to the Editor, dated January* 28, 1806.

"FROM the very great precautions which were taken at the Lazaretto, to examine and purify all veſſels from ſickly ports, or that had ſickneſs on board; and the very particular care which was taken to remove from the city and its vicinity, all ſuch ſubſtances as might have a tendency to contaminate the air; the board flattered themſelves that the city and liberties would have eſcaped the calamities inſeparable from the prevalence of a malignant fever this year, as they had the laſt. Theſe expectations however, were not realiſed, for, on the 30th of July, they received information that two perſons were ill of a fever, with malignant ſymptoms, at the houſe of Samuel Criſman, who kept a retail grocery ſtore at the north-eaſt corner of Catharine and Water-ſtreets, in Southwark, and that one of Criſman's apprentices was ill at his parent's, in the Northern Liberties. The two perſons that were ill at Samuel Criſman's were immediately ſent to the Lazaretto, where one of them died with highly malignant ſymptoms on the 3d of Auguſt; the reſt of Criſman's family retired to the country the day after the removal of the ſick perſons, and his houſe was cleanſed and ventilated.

"At the time the ſick perſons were ſent from Samuel Criſman's to the Lazaretto, there was no other caſe of malignant fever in that neighbourhood, or in any other part of Southwark, and by the confeſſion of Peter Young, one of the ſick perſons, on his death-bed, in the preſence of ſeveral witneſſes, they had made

a clandeſtine viſit to the Lazaretto the Sunday before they were attacked with the diſeaſe.

"At that time ſeveral veſſels from different ports of the Weſt Indies were performing quarantine at the Lazaretto, on board of ſome of which, perſons had been ſick, and had died of the yellow fever, and among others, the ſchooner Nancy, captain Lake, from the city of St. Domingo, with a number of wounded French ſoldiers, who had been received on board from a military hoſpital, ſoon after which the whole of the crew, excepting two, became ill of the yellow fever; one died at ſea after three days ſickneſs, and the captain and one ſeaman were landed dangerouſly ill at the Lazaretto, according to the bill of inquiry and an extract from the log-book of the veſſel tranſmitted to the health office.

"For ſix or ſeven days after the attack of the perſons at Criſman's, no other caſe of malignant fever, within the knowledge of the board, occurred in that neighbourhood, or in any other part of Southwark, the City, or Northern Liberties, and after that period, it made its next appearance in the three neareſt families to Criſman's; it alſo re-appeared on the 8th of Auguſt in Criſman's family, which had returned to the ſame houſe, contrary to the intentions of the board, on the fifth; and a few days later in two or three families on the oppoſite ſide of the ſtreet, and to two in a neighbourhood more remote; and, was evidently propagated from one to another, and afterwards conveyed to other neighbourhoods, in the ſame manner as diſeaſes univerſally acknowledged to be contagious, are uſually propagated, and not like a diſeaſe derived from noxious effluvia diffuſed in the atmoſphere, to numbers in different directions at the ſame time, nor like a diſeaſe occaſioned by foul air proceeding from a particular ſource, which neceſſarily ceaſes to ſpread, or even to exiſt, ſoon after the original ſource from which the foul air proceeded, has been removed or corrected.

"As ſoon as the board received intelligence of the exiſtence of the diſeaſe, they uſed every exertion, ſhort of abſolute compulſion, to remove the ſick and the families with whom they reſided, to houſes provided for their reception in the country. They likewiſe adviſed and urged the immediate removal of all the families in, and near, the neighbourhood where the diſeaſe exiſted; and endeavoured to arreſt the progreſs of the diſeaſe, by preventing, as much as in their power, unneceſſary intercourſe with the ſick, and by warning people, reſiding in other parts, from viſiting or tranſacting any buſineſs in the infected ſtreets.

"Meaſures ſo well calculated to prevent the diſeaſe from ſpreading, could not have failed of ſucceſs, as was proved by the proceedings in Providence, Rhode Iſland, if the people had not unfortunately been impreſſed with an opinion that the diſeaſe was not contagious, and of courſe that no precautions were neceſſary. Miſled by this opinion they diſregarded the regulations and admonitions of the board, in conſequence of which the diſeaſe was gradually conveyed into other families, and into ſtreets more remote, and though the increaſing mortality ſoon convinced the people that the diſeaſe was of a different and more dangerous nature than they had been taught to believe, and occaſioned the precipitate flight of multitudes, it had become too widely extended before this conviction took place, for the ſubſequent regulations and exertions of the board to eradicate it, or entirely ſuſpend its progreſs; they, however, have the ſatisfaction of believing, that notwithſtanding the oppoſition and difficulties with which they had to contend, they were inſtrumental, under DIVINE PROVIDENCE, in retarding its progreſs, and in reſcuing and preſerving a number of valuable lives in Southwark, as well as in preventing the diſeaſe from pervading the City and Northern Liberties, and involving the inhabitants in the complicated miſeries of former years."

REMARKS ON THE FOREGOING.

EVERY publication on the ſubject of an awful epidemic, which has ſo often ravaged the towns on the Atlantic ſhore, and weſtern waters, will command the attention of all the anxious friends of their country: the official ſtatements of the public health officers, are in an eſpecial manner entitled to particular conſideration, becauſe it is to be ſuppoſed, that, having the beſt opportunities of obtaining correct information, they will give all the facts neceſſary to the developement of the origin of the ſcourge, ſubſtantiated by every legal teſtimony, and uninfluenced by private theories or opinions.

Philadelphia has ſuffered much more than the other cities and towns of the United States, and ſcarce a year has paſſed ſince 1793, without alterations of the health law of the ſtate, which no doubt were made in conſequence of the experience of the ſuppoſed defects of the former acts. The medical gentlemen of Philadelphia have alſo repeatedly addreſſed the governor on the ſubject, and furniſhed all the hints in their power to give, in order to preſerve the public health from diſeaſes, as well of foreign as of local origin. Hence the attention to cleanlineſs of the city has been increaſed to a degree, which raiſes the admiration of every ſtranger; while the quarantine on the ſhipping has been gradually made ſo ſevere as to drive away a great part of its former commerce, (eſpecially the very profitable coaſting trade), while the rival cities of Baltimore and New York, by more judicious quarantine regulations have trebled both their foreign and domeſtic buſineſs, and have been partially affected by diſeaſe. The legiſlatures of thoſe ſtates appear to think that there is a point to which human prudence ought to extend, and that to attempt any thing more would be as abſurd as ruinous. But to the point.

To prove the importation of the diſeaſe, appears to be an object of conſequence with the board; and in order to do this, they bring forward the teſtimony of Peter Young, to trace the contagion to the viſit of himſelf and his companion to the Lazaretto, 15 or 16 miles ſouth of the city, where people from the Weſt Indies were then ſick with the yellow fever. But why, it may juſtly be aſked, is the teſtimony of Peter Young, *who is dead*, referred to, while his fellow apprentice, who accompanied him to the Lazaretto, is alive, and of courſe able to afford all the requiſite information, and to ſubſtantiate the aſſertions of Young? Does not the reference to *dead teſtimony*, and the neglect to bring forward that of living perſons, favour of a wiſh to preclude the poſſibility of obtaining a correct ſtatement? It is alſo to be hoped, that the board have taken pains to receive the depoſitions of thoſe witneſſes before whom it is ſaid Young made the confeſſion of his viſit. Beſides, the board omit to ſtate in what mode the boys were conveyed to the Lazaretto. Did they ride in a carriage, or did they row down in a boat? Did they return before night? Was the day extremely warm? What was their daily employment before and after the viſit? The board may ſay, why inquire into circumſtances which we do not believe could in the leaſt influence the queſtion of origin? It may be anſwered, becauſe the private belief of the board will not, and OUGHT NOT TO HAVE ANY WEIGHT WITH THE PUBLIC; and the chief object which renders the annual addreſs to the governor of any importance, are the FACTS, which it is to be ſuppoſed they have in their power to collect, and upon which an opinion may be formed, as to the ſource of the complaint. To the phyſicians in the ſouthern ſtates, who may be anxious to know the truth, it is all important to aſcertain the above facts; becauſe, being accuſtomed to witneſs the operation of the combined influence of the violent heat of a July ſun, marſhy exhalations, of great fatigue, with or without ſubſequent expoſure to night air, in the production of malignant fevers, they will have no difficulty in accounting for the attack of fever in the perſons of Young and

his companions, without having recourſe to the bug-bear contagion. They have philoſophy enough to know that the ſame cauſes will produce the ſame effects, whether in operation in Pennſylvania, on Savanuah river, on the Ganges, or on the Miſſiſippi. At any rate, the board will not ſurely deny the importance of aſcertaining, whether the boys who viſited the Lazaretto, actually went into the room of the people ſaid to be ſick with the yellow fever; becauſe if they merely went on ſhore to view the Lazaretto, without being expoſed to the contagion, and if the power of the above cauſes to produce fever be denied, where, in the name of common ſenſe, was the harm of the viſit? I contend that the expreſſion of the board is an *equivoque*, and requires an explanation, before any weight will attach to it.

The circumſtances of the appearance of the diſeaſe in the "three neareſt families to Criſman's," though carefully ſtated in order to favour the opinion of the epidemic having originated from his houſe, yet fails of effect; nay, ſome facts ſtated by the board themſelves, and others which they have omitted, contradict the idea. It is ſtated that the *ſick were immediately removed (and doubtleſs their bedding with them,) and the houſe cleanſed and ventilated:* how then could the diſeaſe be propagated by contagion to the neighbourhood? Did the members of "the *three neareſt families*" viſit the ſick during their temporary continuance in Criſman's houſe? If not, how could they take the diſeaſe from Criſman, after his return from the pure air of the country to his houſe, which was ready cleanſed for him? Did he infect the family to which he retired in the country with his clothes charged with the ſuppoſed contagion, derived from his ſick boys? Surely ſuch an event ought to have been expected, if it be believed, as the board believe, that the contagion may be carried from the Weſt Indies to the Lazaretto, and from the Lazaretto to the city. And why did not the other ſick boy, who retired to his parents in the Northern Liberties, alſo ſpread the ſame diſeaſe there? The ſilence of the board, as to the firſt

point, fully proves that the friends of Criſman in the country remained well; and though 18 caſes are ſtated to have appeared in the Liberties, yet it is not pretended that any of them were derived from the apprentice of Criſman. As the fact of the introduction of the diſeaſe into the Northern Liberties by him, would have been an *argumentum crucis* in favour of their doctrine of imported contagion, there can be no queſtion but that the moſt minute inquiries were made to aſcertain it, and their ſilence on the point, proves inconteſtably that their inquiries were unſucceſsful. Whence then did the 18 ſick perſons in the Northern Liberties acquire their diſeaſes? The board, who trace the importation of the fever ſo logically into Southwark, are bound to ſatisfy unintereſted inveſtigators on that queſtion. The board ſhould account for this partial operation of contagion, which can remain ſo active all a voyage, take effect in the ſouthern extremity of the city, and not in the northern, and die when carried a few miles out of town! Is THIS LIKE THE SMALL POX? Is IT LIKE ANY CONTAGIOUS DISEASE IN THE WORLD?

Conſiſtently with the preconceived opinions of the board, as to the origin of the epidemic, they proceed to ſtate the progreſs of it in the neighbourhood of Criſman's, as the original *punctum ſaliens*, whence all the miſchief aroſe; and though they in a ſummary mode ſay, it "was *evidently propagated* from one to another, and AFTERWARDS *conveyed to other neighbourhoods*," yet it would have been candid to ſtate to the public what appears to be well known to the medical gentlemen of Philadelphia, that numerous caſes of the diſeaſe appeared in parts of the city far diſtant from Criſman's, and in perſons who had never been near his terrible houſe. The facts will doubtleſs come to light in due time, but it may be well to mention to the board, the caſes of the men employed in laying the water logs in the weſtern parts of the city, and thoſe of others who died in the Pennſylvania hoſpital, in order to ſhew, that notwithſtanding their partial ſtatement, more of the whole truth has reached this remote

ſpot than they appear willing ſhould be known. No one pretends that the cauſes, though certainly domeſtic, operate like the Samiel or Sirocco blaſts, which rapidly deſtroy all within their ſphere. We only know from the hiſtory of former fevers, that though ſcattering caſes occur in all quarters of the city previouſly to the ſpread of the grand epidemic, (thus *ſhewing the operation of the general cauſe*,) yet that it appears with peculiar violence in a certain quarter, which by the people at large, who cannot know particulars, is ſuppoſed to be the ſpot to which the contagion was firſt brought.

The neglect of the people in attending to the wiſhes of the board to evacuate the neighbourhood, and to avoid intercourſe with the ſick, muſt not be admitted as a reaſon for the prevalence of the diſeaſe; nor does it follow, that, becauſe the diſeaſe at Providence was thus arreſted in its progreſs, the ſame effects would have followed a ſimilar conduct in Philadelphia; for the board take for granted that the ſame diſeaſe prevailed in both places, which is by no means proved; nay, it may be doubted whether, had the ſeparation of the well from the ſick been ever ſo completely effected, the reſult would have been ſuch as was predicted. The meaſure has never failed to arreſt the progreſs of the ſmall pox, meaſles, plague, jail, camp or hoſpital fever, and other diſeaſes TRULY contagious, but the attempt has uniformly failed in every inſtance of the American peſtilence in which it has been tried. Who does not recollect the proclamation of the governor of Pennſylvania, which he iſſued at the requeſt of the board of health during the fever of 1797, commanding the communication with the people of Penn-ſtreet to be cut off; and the ſuſpenſion of yellow flags from the windows of the ſick in that quarter*; and what was the reſult? The rapid appearance of the diſeaſe in other parts of the town, with apparently increaſed violence, ſhewed the weakneſs of the meaſure and the

* See Folwell's Hiſtory of the Fever.

univerſal nature of the cauſe. We even find that notwithſtanding the uſe of military cordons round the infected towns of Spain, the diſeaſe ſpread with unexampled violence through Andaluſia during the laſt year; the wretched inhabitants thus ſuffering from the combined effects of an ignorant adminiſtration, and an external enemy.

To conclude. If the doctrine be eſtabliſhed, which the board inculcate, that two boys can find their way down to the Lazaretto, barricaded and guarded as it is, and entering the room of people confined there with contagious diſeaſes,* bring back to the city the complaint they have taken, there can be no heſitation in declaring THAT THE WHOLE QUARANTINE SYSTEM IS ABSURD AND OUGHT TO BE ABOLISHED. The preſervation of the public health, would be ſome compenſation for the empty wharves of the Delaware, but the loſs of both commerce and health, are evils which no country, however rich in reſources, can ſupport.

MEDICUS.

* The actual viſit to the ſick, by the two boys in the preſent inſtance, however, remains to be proved. The fact is admitted for argument ſake.

MEDICAL MUSEUM.

VOL. III.....No. II.

Account of the Diſſection of a morbid Body. *By* DR. H. WADSWORTH.

Farmington, March 18th, 1806.

SIR,

SHOULD the following account of a diſſection, in your opinion, merit a place in the Medical Muſeum, you have liberty to inſert it.

ON the 19th of December 1805, I received a line from Southington from my father, requeſting me to aſſiſt him in diſſecting the body of Ithamar Curtiſs, who died the day before. I accordingly attended immediately. From its having been a lengthy caſe, my father was unable to give me a more particular account than the following.

"I. C. of Southington, by trade a hatter, but had for ſeveral months, previous to his illneſs, been pedling tin in the ſtate of Rhode-Iſland, applied to me on the 13th October 1804, for advice; complained of a dull pain in the head, great thirſt, ſome uneaſineſs about the region of the ſtomach, and had been rather coſtive for ſome time; his ſtools of a light colour, and his appetite then very good. The patient attributed his complaints to having, while in Rhode-Iſland, eaten no other bread than Indian. There was no evidence of any active diſorder of the liver, as he had no pain in the region of this organ or in the ſhoulder; neither did it appear there was any obſtruction of the common duct, as there was no regurgitation of bile. From theſe ſymptoms I concluded a deficient ſecretion of bile to be the cauſe of his diſorder. Emetics, from their mechanical operation, I thought might rouſe the liver from its ſtate of torpor. Their operation was attended with eſſential relief of the head and ſtomach, and he required leſs phyſic for a few days after their operation. During the operation of emetics (of which he took ſeveral), he threw off a great quantity of viſcid, acid matter, and appeared for a while to be rather convaleſcing: but this continued but a ſhort time; his appetite grew voracious, and he began to emaciate and loſe ſtrength very rapidly; he had not the leaſt pain in any part; coſtiveneſs continued. I then thought proper to adminiſter calomel in alterative doſes; which were continued ſeveral weeks without any effect upon the ſyſtem. The laſt four months of his life, he ate as much as five common healthy labourers, and drank proportionately. This enormous quantity was perfectly digeſted without the aid of exerciſe, as his ſtrength would not admit of it; he never appeared to ſuffer the leaſt inconvenience from his food, and uſually ſlept quietly immediately after eating. His appetite continued until the 16th of December, when it failed at once; he complained of no ſevere pain, but univerſal oppreſſion; which continued but a few hours, when he appeared to be

ſinking, grew comatoſe, ſenſeleſs, and died on the morning of the 18th of December 1805."

The next morning I performed the diſſection, in the preſence of ſeveral phyſicians from the neighbouring towns. On opening the abdomen, I found the liver to occupy ſo great a part of the cavity, that I was unable to examine the other viſcera, until I had diſſected it out. I found the upper part of it much thicker than it is found when in a healthy ſtate, and the membranes immediately inveſting it, of a very dark purple: and it weighed ſix pounds and ſix ounces; on cutting into it, it appeared firm and of a healthy colour. The gall-bladder was completely empty and collapſed; the paſſage from it to the duodenum was free from any obſtruction.

I then proceeded to examine the ſtomach, which was empty, and ſo contracted, that it very little exceeded the duodenum in ſize. On laying it open I found none of the rugæ of the villous coat, but a ſmooth ſurface of light yellow mucus (not pus). On ſcraping it with the back of the ſcalpel, this mucus was very eaſily removed, leaving bare the muſcular coat, which, even in that contracted ſtate, was not thicker than the fineſt glove leather. The inteſtines, except the colon, contained nothing but flatus. The colon was ſo completely filled with ſcybalic fæces, that it was nearly three inches in diameter.

The ſpleen was contracted and wrinkled, ſo that it was not more than two inches and a half in length; and its weight could not have exceeded two ounces.

The left kidney was about three times the ſize of the right; which laſt was of the natural ſize.

There was a complete adheſion of the whole ſurface of the left lobe of the lungs, to the pleura and mediaſtinum, with this ſingularity, that he never experienced the leaſt degree of pneumonic affection in the courſe of his life.

Does the above caſe, in which there was ſo ſtrong evidence of deficiency of bile, countenance the idea that the gaſtric juice, according to the doctrine of Spallanzani and Stevens, is ſufficient, without the aid of the bile, to perform digeſtion? That digeſtion in this caſe was performed ſolely by the power of the gaſtric juice, appears probable; from its having exerted a ſolvent power even upon the ſtomach itſelf; at the ſame time exciting an appetite incompatible with the action of a mere cauſtic.

Conſidering the enlarged ſtate of the kidney, the rapid and extreme emaciation, notwithſtanding the enormous quantity of food taken and digeſted; it is not impoſſible that this caſe might have been connected with a diabetes mellitus; and I regret that I am not authoriſed to reject or confirm this ſuppoſition, by acquaintance with the ſtate of the urinary ſecretion.

I am, ſir,

Your friend and ſervant,

HARRY WADSWORTH.

DR. JOHN REDMAN COXE.

Account of an extraordinary Caſe of Diſeaſe in the Stomach; with the Diſſection of the Body after Death. *By* Dr. Edward D. Smith.

Charleſton, May 20th, 1806.

Dear Sir,

I HAVE taken the liberty of tranſmitting to you, the encloſed "account of an extraordinary caſe of diſeaſe in the ſtomach," for publication in your Muſeum, if you ſhould deem it worthy of inſertion. Wiſhing a ſucceſs adequate to the merit of the undertaking in which you are engaged, I ſubſcribe myſelf, with great regard,

Your friend and ſervant,

EDWARD D. SMITH.

Dr. John Redman Coxe.

ON December 13th 1802, I. E. a houſe-carpenter, applied to Dr. S. for advice in his caſe. His appearance was that of one, who had been reduced by long ſtruggles with chronic diſeaſe; countenance ſallow, and limbs ſomewhat emaciated. He complained of a conſtant, and ſometimes acute, pain in the lower part of the abdomen towards the left ſide. Alſo of a very diſordered ſtate of his ſtomach and bowels, labouring under want of appetite, and all the other ſymptoms of dyſpepſia and continual conſtipation. In the part affected, there appeared to be a conſiderable tumor of a ſchirrous hardneſs, which, from its proximity to the ſituation of the ſpleen, might poſſibly be that viſcus in an indurated ſtate. The preceding hiſtory was as

follows. He had laboured under general indiſpoſition in the ſpring of the year, and this affection was ſubſequent to his indiſpoſition. Travelling through the northern ſtates during the ſummer, the pain in his ſide became ſo vehement, that he was compelled to ſeek medical aſſiſtance in the town of Providence, ſtate of Rhode-Iſland. By the advice of two phyſicians, who ſuppoſed the tumour to originate from an affection of the ſpleen, he was put upon a mercurial courſe, and a bliſtering plaſter was applied to the place. The plaſter had the ſtrange effect of cauſing a delirium ſo violent, that it was obliged to be ſpeedily removed. The uſe of mercury was continued until he was completely ſalivated. No material permanent relief was obtained; dyſpeptic ſymptoms began to haraſs him much; his ſtrength and fleſh decreaſed; and he returned, in this ſituation, to Charleſton.

The ſituation of the tumour induced the belief, that no other viſcus than the ſpleen could be affected, and notwithſtanding the little ſucceſs reſulting from the remedies already employed, it was determined that an effort ſhould be made for the relief of what was deemed the primary affection, and that ſuitable remedies ſhould at the ſame time be adminiſtered for that, which was ſecondary or ſymptomatic, now become almoſt as urgent as the other.

As ſome idioſyncraſy appeared to forbid the application of cantharides, in their ſtead the emp. ſtomachic. was ordered. A ſtrict attention to the uſual diet in dyſpepſia was enjoined, and the uſe of garlic, as a tonic to the ſtomach, was directed. To alleviate a troubleſome flatulency then preſent, a mixture of ol. aniſ. and balſ. capivi was preſcribed. For ſeveral days the patient thought himſelf much relieved from all the ſymptoms, and was able to walk about with tolerable eaſe. On the night of the 18th, he was ſeized with violent pain in the tumour, which was ſomewhat relieved by venæſection.—Now

confined to his bed, and ſuffering intenſe local pain, he was again urged to ſubmit to veſication and conſented. No ſuch effect followed the application as formerly. The pain continued conſtant and ſevere, and the tumour appeared to be more in the front of the abdomen. At the requeſt of the patient, Dr. R. was called into conſultation. The emp. calid. was applied over the ſurface of the bliſtered part; anodynes were preſcribed at night, and purgatives during the day. A ſimilarity was ſuppoſed to exiſt between this caſe, and a remarkable diſeaſe of the bowels recorded by Morgagni. The ſymptoms had become exceedingly diſtreſſing. The ſtomach rejected almoſt every thing taken into it, the bowels were obſtinately coſtive, and no natural reſt could be procured; a pulſation was now evident in the tumour, and appearances ſeemed to indicate the formation of an abſceſs in the abdominal muſcles.

The tumour even ſhewed a diſpoſition to point; cold external applications were firſt made, and afterwards warm, but it remained in the ſame ſtate. By deſire of Mr. E.'s friends, Dr. W. was requeſted to attend in conſultation,—Dr. W. had viſited him in a prior indiſpoſition, which, it was ſuppoſed, might have ſome connection with this, and gave the following account of it.

In the latter end of October, 1801, Mr. E. after having ſupped out, on returning home found the gate of the lot, in which he lived, locked. It was of a conſiderable height, and he attempted to jump over it, by placing his hands upon the top, and clambering up with his feet; loſing his hold, he came with much force upon the ground, and felt (as he ſaid) as if ſomething within him had given way. In conſequence of the fall, a ſwelling of the teſticle took place, accompanied with great pain, &c. The antiphlogiſtic treatment was purſued with

him, his complaint proving obſtinate, although not to the extent of ſalivation. He finally gained relief, and was not much haraſſed again, until the time already mentioned. The idea was now ſuggeſted that the tumour might be an aneuriſm of ſome of the large veſſels in the abdomen, produced by the violence of the fall.

Under this ſuppoſition the caſe preſented a hopeleſs aſpect, and medicine could do nothing but palliate the miſeries of the ſufferer. His ſtomach and bowels continued in ſuch condition, that cathartics and anodynes were indiſpenſably neceſſary to his exiſtence. To theſe the uſe of the warm bath was added, until he became ſo weak that he was no longer able to bear the fatigue of going to it. Mercury was uſed for a few days, both internally and by friction, but did not afford any ſenſible relief. The ſymptoms daily became more diſtreſſing, little or no nouriſhment could be retained on the ſtomach, and general emaciation ſeemed to promiſe a ſpeedy termination of diſtreſs. The patient lingered in this condition, until February 19th, 1803, when the vital powers, exhauſted with the ſtruggle, quietly gave up the conflict. It was very deſirable to obtain ſatisfactory information of the true nature of this caſe by examination after death: permiſſion being obtained from the friends, Dr. W. and myſelf opened the body in the preſence of ſeveral phyſicians, when the following appearances preſented themſelves.

Diſſection.

The cavity of the abdomen being opened, a tumour was obſerved in the upper part of it, which, upon examination, appeared to be ſeated in the ſtomach. Only a ſmall portion of the ſtomach could be brought into view: that portion,

which is covered by the liver, adhering ſo firmly, that it was obliged to be ſeparated by the knife. The ſtomach, being diſſected away, was removed from the abdomen; very little of the omentum remained in its natural ſituation, ſo that its abſence from its uſual poſition excited the ſuppoſition, that the tumour was compoſed of it, until more accurate inveſtigation aſcertained its ſeat. The meſenteric glands were enlarged and indurated. The inteſtines preſerved their natural ſituation and appearance, but were full of ſcybala.

The liver, kidneys, &c. preſented no unuſual appearance. The thorax was examined, but no diſorder could be traced in any of its viſcera. The large veſſels, proceeding from the heart, were collapſed and natural. Upon opening the tumour, feces were diſcovered in the lower part of it, probably owing to an inverted periſtaltic motion. The pylorus was much contracted in ſize, and diſcoloured. The different coats of the ſtomach were obliterated, and preſented a diſagreeable appearance to the eye. The texture of the viſcus was hard and griſtly, and the cavity was contracted to one fourth of its natural ſize.

Without preſuming to offer any comments upon this extraordinary caſe, I have endeavoured to preſent a faithful detail, and claim indulgence for the errors of miſconception or memory.

EDWARD D. SMITH.

May 2d, 1803.

Caſe of acute Bilious Fever, ſucceſsfully treated by Nitric Acid. By ISAAC AULD, M. D. *of Ediſto, South Carolina. Read before the Medical Society of that State.*

ON the 19th of September 1802, I was called to viſit William M'Cleod, aged 19 years, of whoſe caſe, I received from his mother the following hiſtory, viz. that he had, the evening before, returned from the country, where he had been on a viſit to his relations, and had ſpent with them about a month; that ſoon after he aroſe from his bed, this morning, he complained of ſlight chillineſs and a dull pain at the pit of his ſtomach, which ſoon after terminated in exceſſive vomiting, violent fever and intenſe pain in his head.

Theſe ſymptoms continued, without abatement, until about 3 o'clock in the afternoon, when they ſuffered conſiderable remiſſion. At this time I ſaw him. I found that ſo general a ſuffuſion of bile through the ſyſtem had taken place, as to reſemble a perſon labouring under jaundice, with the exception of his eyes, which were ſlightly inflamed.

His mother informed me, that ſhe had taken notice of the yellowneſs of his ſkin, immediately on his arrival, and on inquiry whether he had been indiſpoſed, ſince his abſence, he aſſured her he had not. His bowels were obſtinately bound, having been in a ſtate of conſtipation for the two or three previous days. His tongue was moiſt, its edges inflamed, the top white, excepting the middle, down which ran a yellow ſtreak. As his pulſe, which was low and irregular, ſeemed now to forbid the lancet, though there was ſtill ſome pain in the head, and coſtiveneſs and debility appeared to be the principal inconveniences under which he laboured, I contented myſelf with leaving

for him two ſmart purges of calomel and jalap, with directions to take one immediately, and the other in four hours, if the firſt did not procure eight or ten copious ſtools. On viſiting him again, about nine o'clock, I found that he had taken both his purges with the happieſt effect: they were then operating briſkly, and had already produced ſeveral large evacuations of hard, dark, and very fœtid feces. The pain had entirely left his head, his pulſe had become regular and more full; a gentle moiſture had overſpread his ſkin; his ſtomach had recovered much of its uſual tone, and this was accompanied with a deſire for food.

On the morning of the 20th, when I repeated my viſit, he had left his bed, with an aſſurance to his mother, which he repeated to me, that he felt himſelf quite free from indiſpoſition. The diſcharges from his bowels were ſtill kept up; but had entirely loſt their fœtor, and appeared to conſiſt chiefly of healthy-looking bile. His ſkin had become much clearer; as had his urine, which before was of a deep bilious hue. I ſuggeſted the propriety of his taking gentle purgatives for a day or two longer; but this advice, from the comfortable ſtate of his feelings, he declined. His mother according with his wiſhes, I of courſe left him, and conſidered my attendance on him as terminated.

About three o'clock P. M. of the 23d, I was again ſent for, and deſired by the meſſenger to attend, in all poſſible haſte, as the patient was ſuppoſed to be dying. I inſtantly obeyed the ſummons, and found his ſituation ſuch, as to juſtify the moſt alarming apprehenſions. He was ſpeechleſs, his jaws were fixed, as were alſo his eyes, which were nearly cloſed. He had no pulſe at his wriſts; near the elbow in one arm I could feel a ſlight pulſation. His feet, legs and knees, were perfectly cold; and his ſtools, which were black and very offenſive, came from him involuntarily. His breathing had been

very laborious, but it now apppeared to be free from anxiety. In ſhort, ſuch was the *death-like* appearance, which his whole countenance exhibited, that I expected every ſucceeding minute would cloſe his miſerable exiſtence. His mother informed me, that the day I left him (the 22d) the pain in his head and fever had returned with its former violence, and had continued without any diminution, until this morning, when it terminated in the comatoſe ſtate, already deſcribed. Having, in repeated inſtances, witneſſed the revival, as it were, and complete reſtoration of perſons from diſeaſe, who appeared to be excluded from the ſmalleſt ray of hope; I have long determined never to abandon a patient, from motives of deſpair, in whom I could diſcover the leaſt ſigns of life. Under this impreſſion, revolving in my mind, the means I ſhould purſue towards arreſting the fatal progreſs of this caſe, Mr. Scott's experiments on the nitric acid occurred to me, particularly his opinion in favour of its powers, when "given in ſufficient quantity (as he expreſſes) in acute bilious fevers," and this diſorder was obviouſly of this deſcription. Having determined on the exhibition of this medicine, the only difficulty which now occurred, was the probability of his not being able to ſwallow; but having determined on the experiment, I diluted the nitric acid to a ſtrength, that I could readily drink myſelf, and immediately poured a tea-ſpoonful into his mouth, whilſt his mother forced open his jaws: it lay in his throat at leaſt ten minutes, (during which time, his breathing was marked by that rattling noiſe, which often takes place in dying perſons) when he ſuddenly ſwallowed it. On perceiving this, I immediately repeated the doſe, which he received without much effort, and before I left him, he had taken a large wine-glaſs-full. His mother was now directed to continue the medicine, in as large quantities as his ſtomach could bear, without any regard to time; and bliſters were ordered to be applied to his ſtomach, wriſts, and ankles: perhaps it would have been better to have directed

their application to the arms and thighs, as there was more action in thoſe parts; but the propriety of this did not ſtrike me; indeed, I reaſoned but little upon them; I only conſidered them as auxiliaries to the acid, on which I chiefly depended. I viſited him again about ſix o'clock, with little expectation of ſeeing him alive; but to my aſtoniſhment I found him much revived, his eyes had aſſumed their natural condition, and a ſlight pulſation was perceptible at his wriſts. He ſtill, however, appeared inſenſible to the objects which ſurrounded him, and reſiſted with obſtinacy every attempt to give him the acid. During my abſence, he had had ſeveral involuntary ſtools, which were very offenſive. At 11 o'clock, I repeated my viſit. He had taken a meaſured drachm and a half of the acid, and appeared to be in a ſound, undiſturbed ſleep; the bliſters had begun to produce their effects, and warmth was again reſtored to the extremities. I now recommended the exhibition of the acid every hour, during the night; and in the morning, when I repeated my viſit, I was happy to find him ſo much recovered, as to induce a belief, that the chances of living were, at leaſt, equal to thoſe of dying. He was now ſenſible, and knew his friends. He ſtill complained much of a pain in his head, to which was directed the application of cloths dipped in cold vinegar. In order to keep up the diſcharges from his bowels, which were now diminiſhed, I ſent him ſix pills of calomel, of three grains each, with directions to take one every two hours, alternating them with the acid.

This plan was continued through the day, when, in the evening, I found it neceſſary to aſſiſt the pills with a purgative, compoſed of ſeven grains of calomel, and fifteen of jalap, which procured him ſeveral hard, fœtid ſtools. 25th, continued the pills and acid: in the evening complained of ſlight head-ache, pulſe tenſe, ſkin hot and dry; repeated the cathartic. 26th, much relieved; continue pills and acid.

27th, much better; medicines as yeſterday; repeated the cathartic. 28th, perceived ſymptoms of ſalivation; repeated the pills and acid. 29th. On viſiting him this morning I found him out of bed, and walking about the houſe. His principal complaint now was the ſtate of his mouth; in other reſpects, he appeared to be quite recovered; and I conſidered my viſits to him no longer neceſſary. From the 23d to the 30th, he took ten drachms of acid, and ninety-ſix grains of calomel.

The above caſe is a plain ſtatement of facts, and as ſuch, I ſhall leave it, without attempting to offer any obſervations on the *modus operandi* of the medicines I employed: for notwithſtanding the great number of pages, I might perhaps ſay, volumes, which have been written on the ſubject, it is ſtill, in my opinion, involved in much obſcurity. But it is an important caſe, and teaches us never to be diſcouraged from attempting the relief of our patients, under the moſt unfavourable appearances: for, as we know not when life begins, ſo are we, equally, at a loſs to know when it will end.

A Caſe of Cholera Infantum, apparently benefited by the Uſe of the Nitric Acid; with a Diſſection. Read before the Medical Lyceum of Philadelphia, 22d Day of January, 1806. *By* James Stuart, M. D. *Reſident Member.*

M—— L——, a child about eighteen months old, ſoon after the diſappearance of an eruption (which I ſuſpected to have been herpetic) from the back of the neck, was taken with the uſual ſymptoms of fever, which after two or three days continuance, was attended with cholera infantum.

On the 12th of July, 1802, the diſcharges from the inteſtines were very frequent; the gripings ſevere, and the appetite entirely deſtroyed, with occaſional vomiting. After having uſed all the remedies generally employed in the routine of common practice without ſucceſs, I reſolved on making an experiment (an experiment it certainly may be conſidered) with the nitric acid. About 12 o'clock in the day, ſhe took four drops in her ordinary drink, and was deſired to repeat the ſame doſe in the ſame vehicle, every two hours.

13th. Her thirſt, which had been before very urgent, has abated ever ſince five o'clock P. M. of yeſterday, inſomuch, that ſhe has not drank often enough to take more than one doſe ſince I ſaw her. She has been without pain and without dejections ever ſince five o'clock yeſterday afternoon; has had no fever; ſlept well laſt night; and has conſiderable appetite for food. Let the medicine be repeated.

14th. She has taken her medicine as directed; her countenance is better; ſhe reſted well laſt night; the bowels have been opened but four times ſince ſhe began the uſe of the acid, and the diſcharges were natural; the griping is but trifling, and the appetite remarkably keen. Continue the medicine as before, and take care not to indulge her in too much food.

The ſymptoms ſubſided, and occaſionally recurred, until the 14th of Auguſt following; when, ſhortly after a free meal, they, together with the life of the little ſufferer, diſappeared for ever.

In conſequence of a prevailing opinion amongſt ſome of the neighbours, that the child's ſufferings originated in ſome preternatural agency, I was requeſted by the parents to examine the body. This requeſt, after intimating to the by-ſtanders the appearances I expected to meet with, I readily acquieſced in;

and, aſſiſted by Dr. Jacobs, in the preſence of Mr. L. an uncle to the deceaſed, proceeded in the operation.

On opening the *abdomen*, the *omentum* had nearly diſappeared; the *ſtomach* was much diſtended with flatus, and the aliments taken in a ſhort time before death; but otherwiſe was in a natural ſtate, except at the *lower orifice* which was very much contracted. The *duodenum*, for four or five inches below the *pylorus*, was contracted to nearly one half of its uſual dimenſions; the liver was of the uſual proportion, but of a colour uncommonly dark. The *gall cyſt* was found very much diſtended with a pale ſemifluid, ſomewhat reſembling the albumen of an egg in which a ſmall portion of the vitellum (or yolk) had been intimately diffuſed. The appearance of the *ilium* did not deviate from that of the ſame viſcus in health, except that it contained an inordinate quantity of mucus; the *cæcum* was contracted to nearly three quarters of an inch in diameter, while the cavity of the *colon* and that of the *rectum* did not exceed the ſize of a crow's quill. This contraction had proportionally thickened the coats of the viſcera we have ſeen thus changed, inſomuch, that theſe were nearly half an inch through. The *meſenteric glands* were obſtructed through their whole extent, ſo that in parts wherein they are but barely viſible, in ordinary ſubjects, they were here as large as a kidney bean. The *ſpleen* was remarkably pale and contracted; the *pancreas* was in a natural ſtate; the *kidneys* and *glandulæ renales* were enlarged, but otherwiſe of the ordinary appearance. The *urinary bladder* was uncommonly diſtended, but in no wiſe diſeaſed.

The ſhort time from the commencement of this diſſection to the hour allotted for interment, would not admit of an examination of any of the other viſcera; but from the ſymptoms during life, it is preſumed they were all ſound except the *brain*, which, in the laſt days of the diſeaſe, was ſuſpected of containing a quantity of water in the ventricles.

Case of the successful Use of Mercury in Typhus; with Observations on its Use in Tetanus.—On the Use of Cold Bath in rousing the Excitability of the System after Fever. By JAMES MEASE, M. D.

DEAR SIR,

THE publication of single cases of disease unconnected with the developement of principles in medicine, does not often serve a useful purpose; because, when such principles are well laid by the medical man, the application of them to practice is easy; and he who attempts to relieve the maladies of his fellow creatures, without a just and competent knowledge of them, and depends upon finding in books, cases recorded exactly similar to those he may be called to, may hunt without success, nineteen times out of twenty. A dependance upon particular forms of prescriptions is equally absurd, because, supposing the case required, to be found, it is more than probable that the difference in the constitution of the patient, may render the attempt at a cure by the same proportions of the medicines in both cases completely fruitless*; hence the absolute, the indispensable necessity of a practical knowledge of pharmacy to the practitioner, by which I mean an attendance and personal labour, either in the shop of the apothecary, or in one of a physician who compounds his own prescriptions; and hence the evi-

* I have often wondered, when reading the medical works of Britain, what could induce the authors to be so particular as they are, in noting down the numerous prescriptions which they exhibit to their patients from day to day, or from hour to hour. If it be necessary to institute a salivation, the syrup or conserve, with which the calomel pills are made up, is carefully mentioned; if a colic come on, the quantity of laudanum given in any distilled water, lavender compound, or other liquid, to give the mixture a medicinal smell, is religiously added, and all in classic Latin, as if the virtues of the medicine would be increased by concealing their names in an obscure language, or the effects of them on the patients be diminished by knowing what they took. All such conduct savours of quackery, and the sooner it is altered, the nearer will the approach be to reason and common sense.

dent advantage which that phyſician will always have, who has riſen gradually, (if riſing it may be called) from the peſtle and mortar, to the honour of feeling pulſes, over the mere room ſtudent, or hoſpital-walker, who looks on, fearful of ſoiling his hands, and who, when he preſcribes a box of pills, or compound mixture, or even ſuperintends their compoſition, may be unable to ſay poſitively, whether they are rightly made up or not.

In ſome caſes, however, a ſtatement of the utility of a remedy in a particular caſe, may be highly advantageous to the practitioner, who will of courſe carefully treaſure up the fact, and apply it with ſucceſs in a ſimilar caſe, under his own care, provided no objection occur to its uſe; and in this view, I communicate for your Muſeum, the two following caſes, which fell under my care ſome time ſince.

CURE OF TYPHUS BY MERCURY.

A ſailor was landed at the Lazaretto, from the Weſt-Indies, where he had laboured under a fever which terminated in an obſtinate typhus, and had long reſiſted the uſual remedies. I put him on the uſe of bark and wine without delay, with generous nouriſhment; but no effect was produced, nor was any change obſerved in his diſeaſe until after three weeks, when he became evidently more exhauſted. I then gave him 4 grains of calomel combined with opium three times a-day; but the doſes of calomel proving too large for his bowels, I determined to impregnate his ſyſtem with mercury by external inunction. I accordingly had one ounce of ſtrong ointment well rubbed into his lower extremities, three times a-day; for the rapidity with which he appeared to decline, the length of time his diſeaſe had ſubſiſted, and the inſenſibility of his ſyſtem, would not juſtify the ſlow and feeble uſe of this remedy; and I well knew, that unleſs the action of his ſyſtem could be changed, he

muſt continue to ſink. In three days his mouth became ſlightly touched, and every unfavourable ſymptom diſappeared. His conſtant drink was wine and water.

A circumſtance rather ſingular, obſerved, was, that after the mercury had been diſcontinued ſome days, a ſalivation came on, and continued pretty ſevere for three or four days, and then ceaſed.

Several ſimilar caſes of long protracted typhus from the Weſt Indies, occurred during my reſidence at the Lazaretto, which I treated with like ſucceſs by mercury. The quantity required to affect the ſyſtem when externally applied, was ſometimes immenſe: in one caſe, nearly three pounds of ointment were conſumed, and I almoſt deſpaired of producing any effect by it, when a ſalivation at laſt came on, and cured the patient.

Though the propriety of the uſe of bark and wine in caſes of great debility are certainly obvious, yet it is to be regretted that the inſenſibility of the ſyſtem is often ſo great, as either not to be overcome by their exhibition, or to require a tedious uſe of them, which in ſome caſes is attended with an expenſe that is very inconvenient. Inſtances of this inſenſibility of the ſyſtem to internal ſtimuli, are in no caſes more evident than thoſe in the tetanus, in which diſeaſe, almoſt incredible quantities of wine have been taken before a cure was effected. The late Dr. Currie, of Liverpool, has related the caſe of a man, who, when ill with the diſeaſe in queſtion, took 110 bottles of wine, and obſerves that "ebriety was not produced; it ſoothed the irritation of the nerves, and comforted the mind, and without increaſing the frequency of the pulſe, it augmented it in ſtrength."

A delicate young lady of Philadelphia in typhus, began with one table-ſpoonful of Madeira wine, and proceeded to two in a

day, and before ſhe was cured, conſumed 127 bottles. Where mercury may be given, it is certainly better to try it, whether we conſider economy, the rapidity effected in the cure, or the injury which the conſtitution is ſaved from, by cutting ſhort an enervating and alarming diſeaſe. Typhus in particular, is notorious for its injurious effects on both mind and body, produced by its long continuance, and it is in this diſeaſe, that the uſe of mercury promiſes the greateſt benefit; for tetanus in *general* ſo ſoon terminates its courſe, that time is not given for the mercury to take effect, unleſs adminiſtered on the attack; and as the practitioner is ſeldom called until the diſeaſe is fully formed, a chance for its uſeful exhibition is not given. It might be well, however, to give it this chance, by immediately applying it externally and internally as ſoon as called, while at the ſame time, other means are uſed.*

In applying mercury for tetanus, the ointment ſhould be rubbed in liberally to the whole body, which may be ſtripped and put between blankets, but it ought to be eſpecially well rubbed in the throat, with a view to expedite the effect of ſalivation, and that the oil of the ointment may relax the rigid muſcles.

* As this paper may fall into other hands than thoſe of medical men, it may be well to ſtate, that tetanus or lock jaw is cauſed chiefly by two cauſes; 1ſt. By wounds from pointed inſtruments, and by none more commonly than nails in the feet. 2d. By expoſure to the cold of night, after the body had been heated The remedies for the firſt kind, are the application of ſpirits or oil of turpentine, common ſalt, or Spaniſh flies to the wound, which ſhould be enlarged if neceſſary by a ſharp knife, ſo as to raiſe and keep up an inflammation; and ſhould the diſeaſe appear, the uſe of mercury as above, or free uſe of wine or brandy; daſhing buckets of cold water over the body, and rubbing it powerfully afterwards with coarſe cloths, ſo as to excite a glow. For the ſecond ſpecies of the diſeaſe, the ſame general remedies may be uſed. In ſome caſes, a fever attends the diſeaſe, in which caſe bleeding has been uſed with ſucceſs; but this operation ſhould not be ordered unleſs the prevalence of heat, fever, and a tenſe pulſe ſhould require it. In both kinds, opium is uſeleſs, and the warm bath hurtful.

ON THE UTILITY OF THE COLD BATH.

The mate of a veſſel had been attacked by a fever in the iſland of St. Domingo, about two months before I ſaw him. He recovered ſo far, as to be able to ſail for Savannah, but was confined to his bed during the whole voyage. He remained at that place about two weeks, and arrived at the Lazaretto in the latter end of April. He was unable to walk, and could not ſpeak above his breath; his face was ſwelled, countenance ſallow, and he laboured under a violent headach. I now learned that he had been very intemperate before, and during his indiſpoſition: his pulſe was weak and ſoft; bowels regular. I applied a bliſter to the back of his neck, and gave him ſome cordial invigorating remedies, preſcribing at the ſame time a meat diet, ſoup, with half a pint of wine per day. The bliſter relieved his head, and after a few days he appeared to mend ſlowly; but he had an inſenſibility of ſyſtem that was very diſcouraging. His excitability appeared to be exhauſted by his intemperance, and the long continuance of febrile indiſpoſition under which he had laboured. I raiſed my ſtimuli in hopes to excite his ſyſtem to healthy action, but in vain.

In about two weeks after I firſt ſaw him, he evidently began to decline; his pulſe became weak; nervous tremors of his hands came on, and he required to be rouſed when ſpoken to, in order to obtain an anſwer. I applied bliſters to his wriſts and to the back of his neck, and directed three buckets of cold water to be daſhed upon his naked body after being placed in a large bathing tub, and his body to be well rubbed by two perſons with coarſe towels, after the affuſion of the water, and put between blankets. The good effects of this application were perceived in the courſe of half an hour, by the account he gave of the alteration in his feelings, which he ſaid were unuſually pleaſant. He ſlept well that night, and in the morning early, I

found him much better: indeed upon my entering the room, I pronounced him better from the evident change that appeared in his countenance; his eye was lively and clear, and he ſpoke with a ſtrength and rapidity which truly ſurpriſed and pleaſed me. I immediately ordered the cold bath to be repeated, at which he expreſſed his ſatisfaction, and ſo great was the addition to his vigour from the firſt application, that he threw off the bed-clothes, and got into the tub without aſſiſtance; whereas the night before he was undreſſed by others and carried into the tub. The bath was repeated for three days in ſucceſſion with increaſing benefit; but was diſcontinued by reaſon of a ſwelling which then appeared in his cheek. By the uſe of the tincture of gum-guaiacum and generous diet he ſoon recovered.

The ſituation of the patient at the time I preſcribed the cold bath really appeared deſperate, and I was convinced that no internal medicine, of which we have at preſent any knowledge, would have been capable of rouſing him from the inſenſible ſtate in which he was. Had I not feared the conſequences of the delay, I ſhould have tried mercury; but I was apprehenſive that before I could make it take effect he would be too far gone to recover, and that nothing ſhort of a remedy producing a powerful ſhock on his ſyſtem could poſſibly ſave him.

Your friend, &c.

JAMES MEASE.

DR. JOHN REDMAN COXE.

Caſe of Convulſions, cured by the Uſe of Bliſters.

By E. Griffith, M. D.

Philadelphia, July 1ſt, 1806.

MARCH 6, 1806, I was called to Miſs M. a young lady about thirteen years of age, labouring under violent ſpaſms of the ſtomach. Ether and laudanum were liberally adminiſtered, which relieved the complaint for the preſent time.

7th. I found her better, but affected by fits of the cataleptic kind. Theſe fits continued to recur for ſeveral days, and laſted an hour or longer; ſhe was alſo at times attacked by the ſpaſms in her ſtomach, to a moſt diſtreſſing degree. Between theſe various affections, ſhe complained of debility and frequent ſenſe of faintneſs. Strong ſinapiſms to the epigaſtric region entirely removed the ſpaſms; aſſa fœtida, volatiles, &c. ſeemed to alleviate the other complaints, but did not prevent a return of them. She remained quite free from her old convulſive diſorder all the time.

Her mother gave me the following hiſtory of her diſeaſe. Some time laſt ſummer ſhe was ſo ſeverely affected by lightning as to be taken up for dead; a few days after this accident, convulſions came on, and continued for a conſiderable time, at intervals of a few days. Very reſpectable medical advice was had recourſe to, from which ſhe received much benefit.

After recovering, (three or four months back) almoſt entirely from the complaints brought on by the lightning, ſhe received a blow on the back part of the head, by the heavy end of a ſcrubbing bruſh falling from ſome height. This ſtunned her at the time, and ſoon brought back her convulſions. She pointed out the part hurt, a little ſoreneſs remaining ſtill in it.

A ſlight ſhow of the catamenia that ſhe had ſome time ago, induced her female friends to refer her complaints to an obſtruction. The injury done to the head was not regarded as a cauſe of the preſent diſorder by the family. I recommended a diviſion of the ſcalp, in the part that had been hurt; but this being thought a rough remedy, a bliſter was applied over the part, and kept open for ſeveral weeks by dreſſing with cantharides. The complaint continued to return frequently for a week or ten days, but evidently lighter every time, till ſhe was reſtored to perfect health, which has been uninterrupted for more than two months, although the bliſter has been dried up ever ſince ſhe recovered. The catamenia have ſince made their appearance in a regular and healthy manner.

No inflammatory ſymptoms, except a white tongue, appeared during my attendance, and very little was done but the bliſtering.

Hiſtory of a Caſe of Hydrocephalus Internus, in which copious Depletion by the Lancet, &c. was ſucceſsfully employed. By Dr. John Hamm, *of Dover, Delaware.*

Dover, Delaware, July 5th, 1806.

Dear Sir,

In contemplating ſo dreadful a diſeaſe as the hydrocephalus internus, or internal dropſy of the brain, it ſeems to be incumbent on every practitioner of phyſic, to contribute his mite to reſtore thoſe children, who may be afflicted with it, to the fond wiſhes of their anxious and affectionate parents and friends.

If you should think the following case of that fatal disorder entitled to a place in your valuable Medical Museum, a friend to science will be pleased, and society may be benefited.

From, dear sir,

Your's, with respect and consideration,

JOHN HAMM.

DR. JOHN REDMAN COXE.

RODNEY FISHER, youngest son of John Fisher Esq. of this town, aged about seven years, was seized on the 1st of April, 1805, with unequivocal symptoms of a dropsy of the brain. About six weeks before he was attacked, he received a violent contusion, which I saw myself, on his forehead, by falling on the frozen ground, which cut him to the bone. This soon healed, and he continued in good health till the 1st of April. The symptoms were as follow: drowsiness, continual nausea and vomiting, high fever, partial delirium, obstinate costiveness, severe head-ach, chiefly in the fore part of the head; the head-ach alternated with the vomiting; grinding his teeth, picking the bed clothes, and starting often in his sleep; his pulse full and hard, evidently indicating an inflammatory diathesis of the arterial system.

When these symptoms had continued about 24 hours, the pupils of his eyes were evidently dilated, one more than the other; the head-ach became more intolerable, the fever more raging, the pulse frequent, the breathing hurried and quick, and the face flushed; the interrupted slumbers or perpetual restlessness were now succeeded with a lethargic torpor, eyes half closed, insensible to the light, the vomiting ceased, and his pulse now became tense and slow. These symptoms manifestly indicating an internal dropsy of the brain, I ordered a smart dose of calomel and jalap, which not operating, he was repeat-

edly gliſtered till plentiful evacuations from the bowels were produced; an emetic was adminiſtered to cleanſe his ſtomach, which was irritable with vain efforts to vomit; afterwards a ſudorific medicine, veneſection to ℥ 8, bliſter to the neck, calomel, two grains every two hours with the intention of producing ſalivation, with ung. merc. fort. externally, on the throat thighs and legs till his mouth ſhould be affected. The blood was very ſizy.

April 2d. Better after veneſection, &c. Pulſe roſe and became full.

April 3d. Bliſters to his temples; complains much of his head; mercury, internally and externally, continued, and the enema frequently repeated.

April 4th. No better; ſymptoms run high; veneſection to ℥ 8; blood as ſizy as before; mercury continued, but has produced no evident effects upon his ſyſtem. Evening of the 4th, pulſe full and hard; veneſection to ℥ 6; blood ſtill ſizy; gave, fol. ſennæ, which operated well; and appears ſomewhat better.

April 5th. Worſe this morning; the mercury has produced no effects upon his ſyſtem; comatoſe all day, the pupils of his eyes dilated, pulſe ſoft and quick, which ſeemed to threaten an approaching diſſolution. Evening of the 5th, better; pulſe more regular ſince the laſt veneſection; complains ſtill of his head; bliſter to his forehead, which operated thoroughly; mercury externally continued, and pulv. jalap. in repeated ſmall doſes to increaſe evacuations from the bowels.

April 6th. Better this morning, the calomel has taken ſome effect upon his gums; the jalap produced two ſtools very plentiful and green, and brought away one large worm; his eyes better and more natural, and the pupils ſomewhat contracted;

the epiſpaſtic to his forehead, which drew well, ſeemed to have done good, and produced an alleviation of the head-ach; called for ſomething to eat for the firſt time ſince he was taken; his eyes have become ſenſible to the light; mercury continued, with pulv. jalap. in the evening.

7th. Not ſo well as yeſterday; coma and reſtleſſneſs returned; pulſe a little tenſe and irregular; complains of his head again; great irritability of his eyes to the light; no further ſign of a ſalivation; his gums are affected; ſtools very fetid and green ſince the jalap adminiſtered laſt evening; preſcribed another doſe of calomel and jalap; operated well, and he was not ſo comatoſe afterwards.

April 8th. Better this morning; inclined to eat.

April 9th. Much better; ſtopped all medicines.

April 10th. Not ſo well this morning; feveriſh and ſomewhat delirious and comatoſe; pulſe ſlow and very feeble; judged it proper to preſcribe tinct. cort. Peruv. opt. comp. with wine and water in a very moderate quantity.

April 11th. Conſiderably better ſince the preſcription yeſterday, and experienced manifeſt benefit; life ſeemed to have been ſaved by the medicines uſed; and bids fair for a ſpeedy recovery.

April 12th. Appetite good; ſenſes perfect; pulſe healthy and regular.

April 13th. Recovering ſtrength hourly; eats hearty, ſleeps ſound, and goes about the room.

July, 1806. This boy has enjoyed good health ever ſince.

Account of the Use of the Volatile Tincture of Guaiacum, in painful and obstructed Menstruation. *By* Wm. P. Dewees, M. D.

July 16*th*, 1806.

Dear Sir,

As few diseases to which the human female is subject, are more obstinate than painful menstruation, and an obstruction of that discharge, I have been tempted to send you a short account of the use of the volatile tincture of guaiacum in these diseases.

Painful menstruation is a disease but too frequent in our climate; whether this arises from any peculiarity of temperature, or from less regard being paid to this discharge, during its flow, by our incautious females, I will not pretend to determine; but such is its frequency and obstinacy, that, it merits the particular attention of every practitioner, and more especially of those, who have more immediately this class of sufferers under their care.

I shall not enter into a history of this disease, as it is sufficiently described by Cullen, and other systematic writers. I shall, however, advert to one symptom of this complaint, first noticed, I believe, by Dr. Denman, as it is an important one in its history; I mean the discharge of a kind of membrane during the period of the secretion of the menstrual discharge. The casting off of this coat is not, however, invariable with women who menstruate with difficulty; but where it has obtained in married women, my experience goes to confirm the remark of Dr. Denman, that they have been invariably barren. This symptom, if I may so term it, is, I think, more frequent in the country than in cities, and in that particular part of the country in which I first settled,* the women were particularly subject

* Abingdon, about 10 miles north of Philadelphia.

to it; consequently many in that neighbourhood were barren. I had tried a great variety of remedies for this complaint, without ever in a single instance removing it, until I employed the tinc. gum. guaiac. vol.—the only thing, that it appeared could be done, was to abate the violence of pain by bleeding, warm bath, laudanum or camphor.

After having been a long time baffled in this disease, I determined on the use of the medicine just mentioned. I was led to its employment, from supposing it a rheumatic affection which the uterus was labouring under; my reasoning on the subject was short, and perhaps fallacious, but the consequences of it were certainly favorable—I supposed the uterus a muscular part, performing certain specific actions important in the animal economy, and that during this period, it was but too frequently subjected to considerable variety of temperatures, the immediate effect of which for the most part was, either to suppress entirely, or very much diminish, the secretion of the menstrual blood, and that in consequence of this, the same condition was produced in the uterus, as in any other muscular part improperly exposed; that is, it became rheumatic. I will not pretend to point out in what this consists, as I believe we have not yet a sufficient number of observations on parts thus circumstanced, to enable us to offer any thing more than conjecture; I shall not, therefore, hazard one, more especially as the term rheumatic, if it does not ascertain the precise state of the parts, yet sufficiently instructs the practitioner as to the disease itself, and the nature of the remedy to be employed. With a view to obviate or overcome this condition of the uterus, I gave the guaiacum, and it has in almost every instance, answered my most sanguine expectation, nay, at first, went even beyond it; for I did not calculate upon any thing more than relieving the great pain of menstruation; but I found, that this was no sooner removed in married women who had hitherto been barren, than they conceived; of this I could give many remarkable in-

ſtances. In moſt of the caſes of barren women, who were afflicted with painful menſtruation, there was the caſting off of more or leſs of the membranous ſubſtance juſt ſpoken of; when this would come away, pain would ſoon after abate, and preſently ceaſe altogether; but for the moſt part, there was no abatement in the diſtreſſing ſymptoms until this happened. The preſence of this ſubſtance acts on the uterus like every other that becomes an extraneous one, by exciting it to violent and painful contractions until the offending cauſe is removed. The pains attending this complaint are periodical like thoſe of labour, but more permanent in their continuance, and more violent in their degree; in ſome caſes I have witneſſed, four or five hundred drops of tinct. opii have been given, before the pain has been even mitigated: I have known it ſometimes attended with convulſions, and at others, with moſt violent vomitings.

I have juſt obſerved, that every caſe of dyſmenorrhagia is not attended with the diſcharge of this membranous-like ſubſtance; this ought to be admitted with ſome caution; and it would be more proper, perhaps, to ſay, it is not obſerved in all caſes, for I am inclined to believe the ſame diſpoſition exiſts in the uterus, only in a leſſer degree, and to an extent, that in many inſtances does not entirely prevent conception; but the ſame remedy is equally proper in both caſes.

Are there any caſes in which this remedy is not eligible? hitherto I have met with no ſuch caſes; they may exiſt.

I begin the uſe of the tincture in the following manner: a tea-ſpoonful three times a-day, in a glaſs of Madeira, Sherry, or Liſbon wine; I generally direct it to be taken before each meal, and continue it in this way, unleſs it happen to offend the ſtomach when taken before breakfaſt; in this caſe, I order it an hour after. I commence its uſe at any period of the interval between each menſtruation, but diſcontinue it during the diſ-

charge, but so soon as this is over the tincture is again given. It sometimes requires a perseverance of three months to effect a cure, and during this time, the quantity is to be gradually augmented to three tea-spoonfuls at a dose. Should it prove purgative, a little laudanum must be added to restrain its effects on the bowels; should it not be sufficiently aperient, a little resin of jalap may be used with it, or the occasional use of the oleum ricini.

There are some women labouring under this complaint, who, during the menstrual period, will require blood-letting, and some even during the interval; it must therefore be remembered, that the pulse be kept sufficiently down during the exhibition of the tincture. To those who are plethoric, an abstemious diet is necessary, and the occasional use of the warm bath has been serviceable.

Flannel next the skin, and a strict attention to keeping the legs and feet warm, are particularly recommended.

During the flow, bleeding is sometimes necessary, after which, camphor given in the following manner, rarely fails to give immediate relief:

℞ Gum. camph. ℈ j.
—— arab. ʒ j.
Sacch. alb. q. s.
Aqua cinam. simp. ℥ j. m.

one half to be given as soon as pain comes on, and if not relieved in two hours, the other half is to be given; which for the most part is sufficient. I have in some instances been obliged to give laudanum after the camphor, but not often.

I will not pretend to account for the operation of the camphor in this diſeaſe, but its effects are very remarkable, in not only relieving pain, but diminiſhing, and in ſome caſes entirely preventing the diſcharge of the membrane. I was taught the uſe of this remedy by an old woman who had laboured under this complaint, and who in a fit of deſperation, in one of its paroxyſms, drank a wine-glaſs-full of camphorated ſpirit, which to her great ſurpriſe and joy inſtantly relieved her; ſince, it has been recommended in the above and more elegant form, by a gentleman in the Medical and Phyſical Journal.

In two caſes where I failed with the tincture, hemlock was uſeful; and in one other, the tincture of cantharides gave effectual relief.

OF ITS USE IN OBSTRUCTED CATAMENIA.

I ſhall only notice in my account of the uſe of the tincture of guaiacum in obſtructed menſes, thoſe caſes which I think may ſtrictly be conſidered as chronic, and idiopathic. It has been uſual, more eſpecially of late, to regard obſtructions of this kind, as merely ſymptomatic; an error, I conceive, of ſome magnitude. When we reflect on the important and independent functions the uterus performs, we ſhall not heſitate in allowing it diſeaſes peculiar to itſelf, among which we muſt regard the amenorrhagia. In this kind only would I recommend the guaiacum as a remedy. In diſeaſes of the ſyſtem at large, or of any particular viſcus, with which the uterus may powerfully ſympathiſe, this medicine is not to be depended on, or at leaſt not until the original diſeaſe be removed; thus we find in phthiſis pulmonalis, ſchirrous liver, &c. that the uterus ceaſes many times to ſecrete the menſtrual blood; in theſe inſtances it would be in vain to employ the tincture of guaiacum. But where the interruption to the ſecretion has had no other remote cauſe than

expoſure to cold, juſt before or after the time for its diſcharge, or fevers without viſceral obſtructions, this remedy, I can with ſafety declare, from an experience of ſixteen years, never in a ſingle inſtance has failed with me: I look upon it more certain than bark in an intermittent. After the menſes have failed two or three periods, they very rarely return again ſpontaneouſly; if neglected long after this period, they lay the foundation of various unpleaſant ſymptoms, and ſometimes of ſerious ill health. If then a bleeding, a briſk purge, warm teas and warm bath, do not reſtore them at the firſt or ſecond accuſtomed period, we ſhould immediately begin the uſe of the guaiacum. In ſome caſes it is neceſſary to prepare the ſyſtem as it were for its uſe; that is, with women who are robuſt and plethoric: for this purpoſe blood-letting, purging, and a vegetable diet ſhould be premiſed a few days, or until the ſyſtem will bear the ſtimulus of the tincture. When the ſyſtem is thus fitted, it is to be given as above directed, for painful menſtruation; and with the ſame precautions and exceptions. It ſometimes relieves very quickly, at others it will require a perſeverance of five or ſix weeks, but it rarely employs as much time as the diſeaſe juſt ſpoken of.

I have known this remedy in two inſtances reſtore this diſcharge, where it had ceaſed three years, and many where it had failed more than one.

As the tincture I prepare is ſomething different from the tincture of the ſhops, I have ſubjoined my formula.

℞ Pulv. gum. guaiac. ℥ viij.
Carbon. ſod. vel potaſ. ʒ iij.
Pulv. piment. ℥ ij.
Alcohol. dilut. ℔ ij.
Dig.

The volatile ſpirit of ſal ammoniac to be added, pro re nata, in the proportion of a drachm to every four ounces of the tincture: or leſs or more agreeably to the ſtate of the ſyſtem.

I am, dear ſir,

Your's with eſteem,

WILLIAM P. DEWEES.

DR. JOHN REDMAN COXE.

Extract of a Letter from DR. C. C. YATES, *of Albany, to* J. WOODHOUSE, M. D. *Profeſſor of Chemiſtry.*

IF in the courſe of your *travels*, you ſhould happen to meet with the editor of the Medical Muſeum, (I have not the pleaſure of being acquainted with him) you may give him the following information, and if from experience he ſhould find that I am correct, he may publiſh the reſult of his experiments. Being for the moment poſſeſſed with the idea of the good effects ſometimes of the ung. precipit. alb. of the Edinburgh Diſpenſatory, on ulcers, I took the liberty of trying its effect in the next caſe of gonorrhea that offered; I took a piece of a bougie, dipped the point well in the ointment, and introduced it about an inch up the urethra, and turned the ointment in; this I ordered to be repeated three or four times a-day after making water. In this caſe I ſucceeded with the aſſiſtance of a doſe of ſalts. Several I have cured ſince, without any internal medicine whatever. This is certainly a convenient way of curing the diſorder. I have likewiſe found that an injection made by putting ʒ iij. of the elixir vitriol. of the ſhops, into a four ounce

vial, and filling up with water, to prove a better one than any I ever tried. I have known both the above remedies to remove the complaints in 36 hours, and ſometimes not in a week.

I am, dear ſir,

With ſentiments of friendſhip,

Your obedient ſervant.

CHRIS. C. YATES.

Account of an irregular Remittent, and Diarrhœa. In a Letter from Dr. Sawyer *to* Benj. Rush, M. D. *&c.*

Sawyer's Ferry, (N. C.) April 23d, 1794.

Respected Sir,

THE caſes which have occaſioned me ſo much anxiety, and in which I moſt heartily requeſt your advice, ſeem rather to be, a mixture of more than one diſorder, than any original diſeaſe of a particular kind.

The patient is ſeized with an intermittent fever in the fall, which from neglect, ill treatment, or fatigue, generates into an irregular ſlow remittent, or what the people call here an "*inward fever.*" It continues ſeveral months without any alarming ſymptom, and hence it is generally neglected. The patient is able to attend to the uſual occupations of life, though he is generally lazy; the ſkin is for the moſt part dry and yellowiſh; the eyes alſo are of a bilious hue, and the ſight in the advanced ſtage of the diſeaſe, is ſometimes obſcure; the urine is high coloured, and the ſpleen ſomewhat enlarged though not painful.

The pulſe is hurried, never tranquil, though ſomewhat natural in the morning, frequent, ſmall, and in one inſtance, evidently tenſe.

The inteſtines at length become irritable, and the patient is often interrupted with liquid ſtools, produced from the leaſt irregularity of his dreſs or diet; his bowels, however, without much attention again become natural; and without much inattention again become affected with diarrhœa, &c. which at length becomes ſo obſtinately permanent as to be of the utmoſt grievance to the patient, and the greateſt vexation to the phyſician.

The patient from the beginning, is haraſſed with a hacking cough, without much expectoration, which ſeems to keep pace with the diarrhœa: it prohibits the uſe of the bark in a great meaſure before the diarrhœa, and excludes, or at leaſt aſſiſts with the fever to exclude the adminiſtration of opium in the diarrhœa.

To theſe ſymptoms may be added, a troubleſome palpitation of the heart, and "fluttering" as it is called, or rather violent commotion of the carotid arteries. The patient at length becomes reduced almoſt to a ſkeleton, by the conſtant diſcharges from his bowels; by the haraſſment of his perpetual cough, and by the almoſt unabating heat of his fever, until, unable longer to bear their united efforts, he ſinks with ſubmiſſive compoſure, to his lifeleſs fate.

In no period of this diſeaſe, have I yet, ſir, been able to diſcover a remedy. If evacuants are given before the diarrhœa comes on, a large quantity of bile is diſcharged, without any relief. If the patient takes the bark, it increaſes his feveriſh heat, augments his cough, makes him very reſtleſs, and is often rejected. If he takes opium, it ſeldom ſuſpends his diarrhœa, but it often increaſes his cough and fever.

In the caſe of Dr. Hoſmir, a celebrated phyſician of this place, with two experienced phyſicians, I have uſed without ſucceſs, all the probable means, which either my reaſon or imagination could ſuggeſt. This gentleman, who has a northern* conſtitution, has been troubled with an "inward fever," perhaps for eighteen months, and from a multiplicity of buſineſs, paid little attention to his own malady, until he was incapable of paying any to his patients.

When I firſt viſited this gentleman, I thought his diarrhœa was not alarming, that it was the effect of obſtructed perſpiration, and was in no manner, the primary object; that the fever claimed the firſt conſideration, and that on the removal of the fever depended the cure of this diarrhœa. It was in this patient I obſerved the tenſe pulſe; and as his diarrhœa was then ſuſpended by his attending phyſician, (I being a conſulting one) who believed it to be his whole diſeaſe, I thought exceſſive action of his arterial ſyſtem might be reduced by antimonials, and the ſpaſmodic conſtriction which ſeemed to pervade the whole arterial canal, but was particularly evident on the ſurface, might be removed by bliſters; accordingly I preſcribed both, with an injunction, that the bliſters ſhould be repeated as ſoon as the firſt were dried. The effects promiſed by theſe remedies, I thought would have changed his fever to an intermittent, which would yield readily to the bark; but gueſs at my ſurpriſe, when, on a ſecond viſit, I found that the antimonials produced not only a return of his lax, but a ſalivation, and ſuch an indurated ſwelling of the glands of his throat, that obliged his attendants to lay them aſide. The bliſters removed the palpitation of the heart, the commotion of the carotids, but except rendering the pulſe in ſome degree more regular, produced no conſiderable change in his fever.

* He has reſided in this ſtate ten years.

Keeping the firſt object in view, I ordered four ounces of blood to be taken from his arm, which changed his pulſe from being tenſe, ſmall and frequent, to a ſoft, full, and much leſs frequent pulſe. His ſpirits were conſiderably dejected, but on being told his blood was ſizy and ſomewhat buffy, he ſeemed perfectly reconciled to a repetition of the operation if it ſhould be thought neceſſary. As he appeared extremely debilitated, to keep up the general action of his ſyſtem, and without increaſing the action of his arterial ſyſtem, I ordered him a watery infuſion of gentian.

From this time, I flattered myſelf, I ſhould date his recovery; his diarrhœa was ſtopped, his appetite good, his fever and cough both abated, and from his being confined to his room, and almoſt conſtantly to his bed, he was now able to walk over the houſe, and ſit up moſt of the day. But, alas! my hopes were premature, for ſome imprudence in his diet or exerciſe, produced a relapſe of all his diſorders; his diarrhœa was violent, and his cough ſo exceſſive, as to preclude, for ſeveral days, the uſe of aſtringents; nay, after his cough moderated, his inteſtines had ſo far loſt their natural tone, as to be inſenſible to the operation of the ſtrongeſt aſtringents.

His fever ſeldom remitted; his pulſe was never tenſe after the bleeding, and although the bliſters were again repeated, they neither ſuſpended the diarrhœa, nor produced the leaſt change in his fever. He died about fifteen days after his relapſe.

You may judge from this caſe the method I have purſued generally, in the treatment of ſuch patients; and although it is unſucceſsful, and I can deviſe none likely to be ſucceſsful, I ſtill hope, with your advice, to be able to form a method more likely to ſave part, of the many of my fellow citizens, who, in future, may be attacked with this diſeaſe, or rather theſe diſorders.

I have already loſt two valuable patients with this diſorder; diſcharged a third incurable, becauſe he was ungovernable, and have a fourth, who I expect will die every day; ſhe being much emaciated, having a perpetual diarrhœa, and her bowels being ſuſceptible of no change, which the adminiſtration of the ſtrongeſt ſimple or combined aſtringents have always been known to produce.

Believe me,

With the profoundeſt reſpect,

Your obedient ſervant,

M. E. SAWYER.

To Dr. B. Rush.

Caſe of Phthiſis Pulmonalis, cured by Mercury. *By* Dr. William Harris.

Belle-Fort, September 20th, 1803.

Dear Sir,

IT is with heart-felt joy, I now have the ſatisfaction of informing you of the ſalutary effect of your preſcription in pulmonary conſumption, the ſubject of which is myſelf. Laſt ſpring, I was attacked with phthiſis pulmonalis, from being expoſed thoughtleſsly to a current of air, when in a full perſpiration from exerciſe in the garden; I was in a great heat, and the ſweat dripping from me when I opened my breaſt, bare to the freſh breeze then blowing; the effect was a ſudden chill, pain in my breaſt, wheezing, cough, and ſoon after expectoration, with copious night ſweats, which wore me down to a mere ſkeleton; I had no proſpect of ſubduing the diſeaſe, but

looked forward for it to end only with my life; when, about three weeks ſince, I was affected, after being expoſed to cold, with a violent peripneumony, from which I had little proſpect of recovery. In this ſituation your letters occurred to me written in the Medical Repoſitory. I was determined at all events to try the effect: danger from the violence of the diſeaſe would not admit the gradual proceſs of the calomel; I took it as copiouſly as I could bear it, and rubbed on the mercurial ointment on my ſide and thighs, at the ſame time bled copiouſly, 30 ounces a-day, for ſeveral days; bliſtered the whole breaſt, depleted in every poſſible manner, to give the mercury liberty to operate; in 48 hours it anſwered the purpoſe, as ſoon as my mouth got ſore, the pains gradually left me, cough ceaſed, expectoration abated, and every pulmonary ſymptom began to diſappear. I had expectorated nearly, in ſome days, half a pint, and coughed inceſſantly; now, I cough none of any conſequence, and do not expectorate more than two or three times in the day, and that with eaſe; my appetite has returned, and every proſpect of health is great.

Whether I ſhould continue the ptyaliſm, or uſe tonics, I am rather at a loſs to know; my debility is very great, not being able yet to walk alone. I can ſit up a little. From the violence of the peripneumony in a great meaſure, I carried the ſpitting to upwards of two quarts daily for ſome time; now I do not ſpit more than half a pint, and feel quite well; and ſhould I not get cold, I believe no doubt remains, but that the mercury has conquered the diſeaſe which I believe nothing elſe yet known could have done; and for the diſcovery and publication of which, I acknowledge myſelf indebted to you for the reſcue of my life. May God bleſs you.

I am with deep gratitude,

WILLIAM HARRIS.

Dr. Benj. Rush.

Succeſsful Uſe of the Nitric Acid in a chronic Complaint, with a few Remarks. By John C. Otto, M. D.

MISS ——, aged about 17, of a delicate form, and naturally of a ſallow complexion, but who had always enjoyed a good ſtate of health without having the appearance of it, went into the country in the autumn of 1799, to avoid the Yellow Fever. During her abſence, her face and whole perſon very gradually aſſumed a yellow aſpect like a perſon in a ſlight attack of jaundice, but ſhe remained entirely free from pain or fever; her appetite became more delicate; ſhe was unuſually fatigued upon taking her ordinary exerciſe, and became very coſtive in her habit.

Theſe ſymptoms increaſed ſomewhat in the enſuing winter; every ſudden movement or conſiderable exertion being attended with palpitations of the heart and vertigo; ſhe ſlept, however, very well, and when the weather permitted, ſhe took gentle exerciſe and viſited her friends.

Free from pain and fever, and fond of ſociety, ſhe did not ſubject herſelf at firſt to thoſe reſtrictions, which were neceſſary in a habit ſo ſenſible to impreſſions as hers had become; ſhe found at length, from experience, that ſhe muſt keep a reſtraint upon her feelings, which were naturally lively, to prevent the effect of any ſudden exertion their indulgence might produce.

In the ſpring ſhe was rather better, and although delicate, was ſufficiently well to undertake an excurſion to New England, where ſhe had an extenſive family connexion, and much expectation was derived from the effect of a change of air, and frequent gentle exerciſe. She conſulted a medical gentleman during her abſence, who adviſed the cold bath, but ſhe was

very ſoon obliged to diſcontinue it, as it left her chilly and feeble, her ſyſtem not having reacted, and an hour uſually elapſed before her natural feelings were reſtored to her.

Her ſtrength was improved by the viſit, but an unpleaſant ſwelling ſlightly commenced, firſt in her feet and ancles, then in the body, and afterwards in her face and hands, diſcovering that her complaint, although it might have been retarded by the jaunt during the ſummer, was ſtill progreſſing. Theſe ſwellings were ſlight and tranſient, and after remaining a few days, would entirely diſappear, and return again in a ſhort time, without any aſſignable cauſe ; they were more particularly confined to the feet, and were greateſt in the evening.

Her general indiſpoſition increaſed in the enſuing winter after her viſit to New England, ſo that ſhe was rather more delicate than ſhe had been at any previous time : during all this period, ſhe took only a few domeſtic remedies which her mother thought proper to preſcribe, and ſome that her coſtive habit rendered neceſſary. In the ſpring ſhe was rather worſe, and in the beginning of ſummer I was conſulted : her pulſe was weak but not febrile, her whole ſyſtem diſcovering marks of debility, with perhaps ſome derangement in the functions of the liver, ariſing probably from torpor, for ſhe never complained of the leaſt pain upon preſſing it. After taking two or three emetics, ſhe went into a healthy part of the country and paſſed the ſummer there, uſing gentle exerciſe, and occaſionally on horſe-back.

I adminiſtered during the ſummer various tonic medicines, and from the obſtinacy of the diſeaſe, I had an opportunity of trying a great variety of them ; ſhe began with the ruſt of iron, joined with a bitter and an aromatic, afterwards Peruvian bark in various forms, and united with bitters, elixir vitriol, wine bitters, ſuch as camomile, quaſſia, columbo, gentian, Virginia

ſnake-root, &c. Her ſtrength was rather diminiſhing, and her menſes, which had hitherto been tolerably regular, ceaſed during her abſence in the country. After her return, I applied ſeveral bliſters in ſucceſſion to the region of the liver, and continued the tonic treatment, ſhe remaining ſtill free from fever and pain; ſhe was then put under a gentle courſe of mercury, keeping up the ſalivation three weeks, and ſupporting her ſtrength with any kind of nouriſhing diet her ſtomach would bear; but this plan had no effect in arreſting the progreſs of her complaint. Her weakneſs and diſpoſition to faint increaſed, and the ſwellings before mentioned became ſo conſiderable that ſome of her friends conceived her far gone in a general dropſy, and ſuppoſed that this was the diſeaſe in which her long previous indiſpoſition was to terminate.

Her ſtrength gradually decaying, ſhe was by the middle of winter, confined to her chamber, and ſoon afterwards to her bed, being unable to walk acroſs the floor without being exhauſted, and troubled with palpitations of the heart, and ſhe fainted ſeveral times, merely by attempting to turn rather ſuddenly in bed. The leaſt noiſe agitated her, and the whole train of nervous ſymptoms increaſed to ſuch a degree that we ſuppoſed her life would be continued but a few days.

Having tried to conſiderable extent the tonic plan of treatment, which I ſuppoſed was ſuited to her complaint, I looked forward almoſt with deſpair to a favourable iſſue of it, being determined however to perſevere while life remained, and to give the conſolation of attempting to afford relief, I reſolved at length to uſe the nitric acid; ſixty drops of it diluted with a pint of water or as much as would prevent its being too ſtrong, were ordered to be taken in the courſe of twenty-four hours, and ſo far from the ſtomach being oppreſſed by the quantity, its tone was rather improved, and the doſe was gradually increaſed to ſeventy-five drops a day. After perſevering in its

uſe three days, ſhe was rather better, which gave ſome encouragement to perſiſt, and at the end of one week, her appetite and ſtrength were certainly improved, her diſpoſition to faint was leſs frequent, the palpitations abated, and ſudden noiſe did not agitate her as much as before.

The improvement from this time was regular and rapid, her complexion became leſs ſallow and more natural; her menſes returned at the end of two months, during all which period ſhe took the nitric acid, and her health when ſhe diſcontinued the medicine was better than it had been for two years. Fearing a ſlight relapſe, ſhe took the ſucceeding winter two ounces of the acid, and has ever ſince enjoyed a good ſtate of health.

The medicine produced no ſalivation or unpleaſant taſte in her mouth; but ſhe imagined it changed the colour of her hair, for ſhe aſcribed the alteration in it to the medicine, it having become much lighter, and has continued ſo ever ſince.

Perceiving the effect of the nitric acid in this caſe, I have occaſionally uſed it ſince, not only where I ſuppoſed the liver to be affected, but as a general tonic. My experience has been various, but it appears to be eſpecially ſuited to thoſe caſes of chronic hepatitis, where mercury has been exhibited without producing a complete cure, or where the pulſe and general weak ſtate of the ſyſtem do not admit of this eventually debilitating medicine. Obſerving it generally to produce an effect on the ſtomach, increaſing its tone and improving its natural functions, I have employed it in two inſtances as a tonic, where elixir vitriol, columbo, quaſſia, chamomile flowers, bark and ruſt of iron, &c. had failed, and have relieved with it, acute pains in the head and cheſt, that appeared to be the effect of a delicate nervous ſyſtem and not of inflammation, after having been diſappointed in various remedies that are uſually adminiſ-

tered in ſuch caſes. My experience, however, has not been ſufficiently great to form with certainty any general concluſions, or to point out in what caſes, it may with confidence be relied on, but I have learned it is a valuable medicine, and may be employed in ſome complaints in which it has not heretofore been given.

JOHN C. OTTO.

An Oration delivered before the Medical Society of South-Carolina, at their Anniverſary Meeting, December 24th, 1805. *By* FREDERICK DALCHO, M. D. *Secretary of the Society, &c.*

GENTLEMEN,

AGREEABLY to the rules of our ſociety, it is the duty of our Preſident to nominate a member "to prepare and record, at each anniverſary, a review of the weather and diſeaſes of the current year,* together with ſuch medical obſervations as may appear to him to be uſeful, and connected with the objects of the inſtitution." He has done me the honour to nominate me for the preſent anniverſary. I could have wiſhed his choice to have fallen upon ſome perſon more worthy of this diſtinguiſhed honour; upon one, whoſe capacious mind, illumined by the rays of ſcience, could have rendered his ſubject more worthy of your attention; who could have recorded the medical occurrences of the paſſing year, in language ſuited to the dignity of his theme.

Little accuſtomed to write upon medical ſubjects, I have only been induced to acquieſce in the nomination, by my ſin-

* It is much to be wiſhed that ſuch modes of information were more common; inaſmuch as they contain a large proportion of facts, important to the Medical Hiſtory of our country. *Editor.*

cere deſire to contribute every talent which I poſſeſs, to the ſervice of our ſociety, and to the advancement of our profeſſion. Before an audience ſo impoſing I ſhould ſtand abaſhed, did I not feel conſcious of receiving your candid indulgence.

In taking a general review of the paſt year, our firſt attention is drawn to the very remarkable degree of health which prevailed through it. While embattled legions ſtained the blood-polluted ſoil of the eaſtern continent; while the ocean trembled with the dread exploſion of conflicting fleets, and was crimſoned with human gore; while the bloody, murderous buſineſs of butchering our fellow creatures, was brought within ſight of our peaceful doors;* while the foul fiend of peſtilence was ravaging our northern cities, and death was ſtalking every where abroad;—We, exempt from the deſtructive evils of war and diſeaſe, and bleſſed with a harveſt of the richeſt plenty, have felt not the diſtreſſes of our leſs fortunate brethren. To HIM to whom the ſeaſons are tributary, and to whom the ſword and peſtilence are but avenging meſſengers, be our thanks moſt gratefully and moſt humbly offered.

The viciſſitudes of the weather which occurred in the month of January, were greater than is remembered for upwards of twenty years. The genial warmth of ſpring, was, oftentimes, ſuddenly ſucceeded by the winter's deepeſt gloom. Our conſtitutions, unprepared for this rapidity of changes, ſuffered from the diminution of the temperature of the atmoſphere, and catarrhs, pleuriſies and rheumatiſms were the conſequence;

* The Britiſh ſhip *Eſther*, CAPT. IRVING, with a pilot on board, was captured within view of this city, on the fourth of November 1805, by the French privateer *Creole*, CAPT. BURGMAN. Captain Irving made a brave reſiſtance, and after loſing ſeveral of his men and having many wounded, he ordered the colours to be ſtruck, and retired into his cabin, where he was inhumanly butchered by the privateerſmen.

but not in a greater number than was uſual at that ſeaſon. Some caſes of bilious pleuriſy were likewiſe obſerved.

The mercury, in Fahrenheit's thermometer, on the 10th was at 69°, and fell to 22° on the following day. On the 19th it had fallen 16° ſince the preceding evening; and on the 21ſt, 13°. On the 22d it was lower than it had been for many years; out of doors it fell to 16° above 0. On the 25th it roſe 15° ſince the preceding day. The fall of rain in this month was two inches and three tenths.

The weather throughout all the ſtates, was unuſually ſevere and tempeſtuous in the month of February. Along the whole extent of our ſea coaſt, nothing but very heavy gales of wind prevailed. Many veſſels were loſt, and thoſe which eſcaped the fury of the elements, were miſerably diſtreſſed by very long paſſages. On the fifth of the month the mercury was at 62°, when ice was ſeen in the ſuburbs of the city three inches in thickneſs.

The viciſſitudes in the weather were very great, in a few hours varying from uncomfortable warmth to intenſe cold—and, what has not occurred for many years, there were ſeven days in the courſe of the month, when the hygrometer indicated a dry ſtate of the atmoſphere. The month of February, generally, was healthy. Catarrhal complaints, rheumatiſms, pleuriſies, ſcarlatina anginoſa, and cynanche maligna were obſerved, but were few in number.

Notwithſtanding the very extraordinary renewal of vegetation in the fall of laſt year, after the hurricane, the trees were in bloom the beginning of March.*

* The hurricane which commenced on Friday the 7th September 1804, and continued until the Sunday morning following, completely deſtroyed vegetation

The month of March, generally, was healthy; a few caſes of pleuriſy, inflammatory ſore throat, and natural ſmall pox were the only diſeaſes. On the 15th of the month, there was a very heavy hoar froſt. The hygrometer marked ſix dry days during this month. Indeed, the whole month may be termed dry, as it rained but on three days, during which there fell only one inch and three and a-half tenths.

The firſt two weeks in the month of April were dry, and very unpleaſant, from the quantity of duſt and ſand which was conſtantly ſuſpended in the atmoſphere, by the ſtrong weſtwardly and ſouth-weſtwardly winds, which prevailed. No rain had fallen from the 6th of March to the 14th of April. The dry weather was ſucceeded by cholera morbus, which ſoon became very prevalent, but was not attended with any conſiderable mortality. Natural ſmall-pox ſtill prevailed, from which two deaths occurred. Catarrhs, chicken-pox and intermittents were alſo prevalent.

The weather in the month of May was unuſually cold for the ſeaſon, particularly on the 26th and 27th, when the mercury was down to 72°. On thoſe days the weather was ſo raw and uncomfortable that many families had fire in their houſes. The prevailing diſeaſes were dyſentery, cholera morbus, cholera infantum, pneumonia, chicken-pox, natural ſmall-pox, intermittents and ſcarlatina anginoſa; the laſt of which was very mild and terminated favourably.

in and about the city. It was, probably, occaſioned by the ſalt ſpray which was raiſed and carried by the wind, for the trees were covered with ſaline particles, and appeared as if they had been dipped into hot water. They however ſoon revived and were covered with new foliage, bloſſomed as in the ſpring, and in November, there was a ſecond crop of ſeveral kinds of fruit.

In the month of May it was determined by the ſociety, to appropriate their lot of land for a term of years, for the purpoſe of eſtabliſhing a botanic garden. There is not, I am ſure, a gentleman preſent, who will not rejoice with me in the extenſive proſpect which is opened in the field of natural hiſtory, by the eſtabliſhment of the botanic garden of South-Carolina, under the auſpices of this ſociety. It will enrich our country with the moſt valuable and rare, as well as uſeful vegetable productions, of every foreign clime, and make us acquainted with the virtues of our own. When ſtraying in the fields or enjoying the ſhade in our woods, the rich beauties of *Flora*, which every where beam upon our eyes, will become our familiar acquaintances; their habits and uſes; their family and kindred; their companions and aſſociates will become known to us. To trace the Almighty Artiſt's hand in the mechaniſm of the parts of fructification, and there view the wonderful and efficient means by which they continue their likeneſs; to trace the wonderful perfection which exiſts in the meaneſt weed or blade of graſs, muſt exalt our ſouls to HIM, whoſe wiſdom planned, and whoſe almighty fiat made them; whoſe beneficence has bleſſed his creatures with ſuch an abundant and inexhauſtible ſtore of uſefulneſs and beauty, in the works of his creation.

The unuſual degree of cold which prevailed during the early part of the ſummer, can only be accounted for, by the diſſolution of thoſe enormous bodies of floating ice, which have been met with in our latitude.

This brings to my recollection, an obſervation which is made by the learned Darwin in ſome of his works, that it would redound infinitely more to the honor of the great maritime powers of Europe, to employ their numerous fleets in towing theſe immenſe mountains of ice into the warmer lati-

tudes, than by employing them in each other's deſtruction. It is an obſervation which ſprings from the fineſt feelings of a benevolent heart, rich in goodneſs towards its ſuffering fellow creatures, and pleaſed with the flattering hope of doing good to ſociety: but it will avail nothing. When will the great monarchs of the world be governed by the nobler motives of public good and public benevolence, rather than by the vain deſire of extending their territories, and rendering themſelves famous in arms? When will they believe that the blood of a fellow creature is of richer value, than whole acres of ground? And when will they believe, that the riches of a nation conſiſts in its population and health, rather than in its boundaries? Never, I am afraid. But until then, conflicting fleets will be expoſed in dread array for the deſtruction of the human ſpecies; and the ſword, peſtilence and famine be uſed as inſtruments for the aggrandizement of an individual.

The month of June was, generally, healthy. Bowel complaints among children, natural ſmall-pox and ſcarlatina anginoſa, ſtill continued to be prevalent. From the quantity of rain which had fallen, there were many caſes of intermittent fever. On the 6th of June there was a violent ſquall of wind and hail, which beat down the eaſtern end of the lazaretto on Sullivan's Iſland. On the 13th, large iſlands of ice were met with, a few degrees to the northward of our latitude.

In the month of July, the complaints among children became increaſed in number and mortality; many fell victims to cholera infantum and worms. Scarlatina anginoſa and natural ſmall-pox ſtill prevailed. Dyſentery, intermittents and remittents were frequently met with, and pleuriſy was likewiſe obſerved. A fatal caſe of apoplexy is recorded in our books on the 14th, when the mercury was no higher than 88°. The number of intermittents in the different cemeteries in the month

of July, were 39 whites and 93 blacks; of which 28 were new negroes.

The month of Auguſt was unuſually healthy for the ſeaſon, though a few caſes of yellow fever were noted. Bilious remittent and intermittent fevers, with natural ſmall-pox, were the diſeaſes moſt prevalent. It rained on ten days in this month, and thundered on eleven. Fewer deaths occurred in this month, than in the laſt. There were interred 47 whites and 51 blacks, of whom 17 were Africans.

In the month of September nine inches of rain fell, which cooled the air ſo much, that the thermometer was no higher than 86°, which is lower than it has been in any September ſince the year 1799. Eaſtwardly winds prevailed.

The yellow fever prevailed in the city much leſs than in former years. Natural ſmall-pox, dyſentery and ſcarlatina anginoſa were more prevalent. The north-weſtern ſuburbs of the city were unhealthy, intermittents generally prevailing, which readily yielded to the uſual treatment. But, in this diſeaſe, the mineral ſolution of arſenic, has been uniformly found decidedly preferable to the bark.

The yellow fever is either a reflection upon our talents, or a proof of the imbecility of our art. It appals the heart of the boldeſt phyſician, and plunges the moſt experienced judgment into uncertainty and diſmay. It equally mocks the efforts of the enlightened phyſician, and the random preſcriber of medicated noſtrums.

Eleven caſes of this fever fell under my care. It has been believed, at leaſt it has been aſſerted, by ſome medical men in this city, that it is neceſſary for the exiſtence of black-vomiting, uſually ſo denominated, and ſubſequent death, to entitle the

diſeaſe to the name of yellow fever. I ſhould juſt as ſoon think it neceſſary, that both bones in the leg ſhould be fractured, in order to entitle it to the appellation of a broken leg, as to believe it neceſſary, that every ſymptom, which at different times does take place, ſhould exiſt in every caſe of this diſeaſe. We know that the ague and fever has received the noſological title of *febris intermittens*, yet, every caſe of intermittent fever is not preceded by an ague. We know that in almoſt every diſeaſe with which we are acquainted, that ſymptoms not only vary in their appearance and force, but that ſometimes, the variation is ſo great as even to lead to a doubt of the identity of the diſeaſe.

During the prevalence of our endemic, almoſt every inflammatory diſeaſe partakes, more or leſs, of the nature of this great ſcourge of ſociety; and, to preſcribe with ſucceſs, it is neceſſary to have this connection in view. Even the circumſtance which has very improperly given the name to this diſeaſe, is not always an attendant, although black-vomiting may exiſt, and the patient die. A yellowneſs of the ſkin is not always preſent. I have loſt patients, in preceding ſummers, in whom this mark did not exiſt, and therefore, it is not a characteriſtic of the diſeaſe, eſpecially as it often takes place in other diſeaſes. The characteriſtic ſymptoms, which, in my mind, mark the yellow fever, are, a wildneſs of expreſſion in the eyes from their inflammation and apparent protruſion; a pain and ſenſe of heat in and over the eyes: theſe ſymptoms, as far as my obſervation extends, are always preſent; a pain or ſoreneſs in the ſtomach on preſſure frequently occurs, but not always. With theſe, ſeveral of the other ſymptoms of fever exiſt; ſuch as a dry parched ſkin, pain in the back, calves of the legs, &c. From theſe conſiderations, I am of opinion that ENDEMIAL CAUSUS, according to Dr. Moſely, is a more appropriate name for this diſeaſe, than *Synochus Icteroides* or Yellow Fever.

The caſes of cauſus which fell under my care laſt ſummer, were unaccompanied with black-vomiting, even in thoſe which proved mortal. In thoſe there was a conſiderable degree of irritability of the ſtomach, which ſometimes produced ineffectual efforts to vomit. Bliſtering, I knew from experience would relieve this; but I wiſhed to aſcertain the efficacy of alkalies in *preventing* vomiting, when uſed from the commencement of the diſeaſe, and before this diſtreſſing ſymptom had taken place. With this view, I directed, after every doſe of medicine, a wine-glaſs-full of *lime-water*, either by itſelf, or mixed with an equal quantity of milk. No vomiting took place. If the non-occurrence of black-vomiting in theſe caſes is to be attributed to the alkali neutraliſing the ſeptic acid which exiſts in the ſtomach in this diſeaſe, then we muſt infer, that the conſequent inflammation, which bliſtering relieves, is the effect of this acid acting upon the tender coats of the ſtomach, and, therefore, by rendering this acid a tertium quid, the cauſe of a moſt diſtreſſing and troubleſome ſymptom is removed. Alkalies given from the commencement, would, therefore, certainly be attended with advantage.

One of the patients whom I loſt, was a ſtrong athletic man of 25 years of age, an European, only four months in the city. From the ſtrength of his conſtitution, and from the irregularity of his living, without ſuffering much inconvenience therefrom, he affected to hold the faculty in contempt. He diſregarded the advice of his more prudent friends, and laughed at the concern which many of them took in his welfare. He would oftentimes expoſe himſelf to the burning rays of our mid-day ſun, and ſpend the night in diſſipation and riot. He died on the 5th day of the diſeaſe. He had taken 362 grains of calomel; had ℥ ij. of calomel rubbed in his gums, and ℥ iv. of ſtrong mercurial ointment rubbed into his legs and thighs; and he wore ſocks filled with the ſame; he had likewiſe ℥ viij. given him by injection. Not the leaſt fætor was obſervable in his breath, nor

the ſmalleſt inflammation in his gums. I took from him in the courſe of 18 hours, five pints and an half of blood, by meaſure. He became yellow on the third day.

Another patient whom I loſt, became yellow on the 3d day, and on the 4th, had petechial ſpots; it became typhoid, and terminated fatally on the ſeventh day.

The *endemial cauſus* prevails moſt in low flat countries, where there is much ſtagnant water, and from whence there is, in hot weather, a rapid decompoſition of animal and vegetable matter. It prevails more to the ſouthward of New York than to the northward of it. But what peculiarities exiſt which ſubject the inhabitants of Philadelphia and New York to the ravages of this diſeaſe, and in Charleſton only the ſtrangers, is a matter of ſerious phyſiological inveſtigation. It rarely affects the natives, or thoſe who have been here for two or three years. On the ſubject of its origin no doubt remains. We have abundant ſources of it among ourſelves, without having recourſe to importation. This is now happily exploded.

The treatment of *endemial cauſus*, is yet a deſideratum in medicine. The whole Materia Medica has been ranſacked for remedies, as diverſified in their effects as in their form and number. To read in the public prints, the many atteſted caſes of the efficacy of particular remedies in this diſeaſe, would lead us to believe it to be one of the moſt eaſily cured of any which afflict our fellow creatures. Dreadful as the duplicity of the people is, in ſuffering themſelves to be cheated out of their exiſtence, by the uſe of boaſted trifles, yet, it is equally dreadful when the type of the diſeaſe is miſtaken even by regular practitioners. When they believe that a putrid diatheſis pervades the ſyſtem, and that it is undergoing a rapid diſorganization from putrefaction; when they believe that the powers of life are weakened by the direct application of debilitating cauſes,

and when they preſcribe cordial and tonic remedies to ſupport the vigour of life, by reſtoring the ſuppoſed loſt tone of the ſyſtem.

On the contrary, happy indeed muſt that patient be, who feels conſcious that he has fallen into the hands of a phyſician, upon whoſe mind the new and luminous doctrines of our profeſſion beam with the brighteſt luſtre; in whom the prejudice of education, and the veneration of great names, have ceaſed to mar his judgment. Who views fever as an unit, and the conſequence of the application of ſtimuli; and, who believes the ſuppreſſed pulſe, which we ſometimes feel at the commencement of the diſeaſe, to be owing to an exceſs of ſtimulus, and that the increaſed excitement in the muſcular fibres of the arteries prevents their dilation; who knows that by exhauſting the excitability, by copious and rapid depletion, that exceſſive action muſt ſubſide, and that as the morbid action of the ſyſtem diminiſhes, the healthful powers of life will riſe and aſſert their conquering pre-eminence. The enlightened phyſician, with this theory impreſſed upon his mind, muſt reject the uſe of tonics and cordials, and fly for ſafety and ſucceſs to debilitating powers; he relieves the oppreſſed ſyſtem of the burden of morbid excitement; he reduces the action of the circulating ſyſtem to its natural ſtandard, and fortifies the healthful point, by tranquillizing the general commotion.

Is there a phyſician who would heſitate to abſtract large and repeated quantities of blood from a patient ſeized with pneumonia? Would he not, by every means in his power, endeavour to leſſen the inflammatory action of the ſyſtem? and is there not, in every caſe of *endemial cauſus*, the moſt marked ſymptoms of exceſſive inflammation pervading the whole ſyſtem, particularly evidenced by the affection of the eyes and head? Then purſue the ſame mode of treatment, and in *cauſus* leſſen the inflammation, by bleeding and purging as copiouſly and as

frequently as the violence of the action requires. Strong mercurial purges are beſt calculated to produce this effect, for they diſſolve the reſin of the bile and empty the lymphatic veſſels. After the diſcharge of that abominably fœtid, bilious matter which is generally produced by purging in this diſeaſe, if a ſufficient quantity of mercury can be given to affect the ſalivary glands, the patient is generally relieved. I ſay *generally*, for I have ſeen an inſtance of death taking place in a young man whom I was called to on the fourth day of the diſeaſe, and who was in a ſalivation from his own preſcription for *lues*.

That mercury, after complete evacuations, affords greater ſucceſs than any other plan which has been purſued, I believe, at this day admits of little doubt. But, it muſt alſo be acknowledged that it very often fails. To what principle does mercury owe its good effects in this diſeaſe? Is it to its oxygen? There are other ſubſtances which contain it in larger proportion, and part with it more readily. Beſides, can the quantity contained in a few grains of calomel, which we know oftentimes to produce ſalivation, be ſufficient to oxygenate the ſyſtem? Tobacco, and a variety of other vegetables are ſialagogues, but they would not, I believe, procure relief in this diſeaſe. Is it owing to the metal? This cannot be the caſe, for ounces may be ſwallowed without any other effect than what is produced by its preſſure. To what principle then, can it be owing? It has no effect in this diſeaſe until after the action of the arterial ſyſtem is completely reduced. It would then ſeem to exerciſe its power moſt forcibly upon the lymphatic ſyſtem. The action of theſe veſſels and general abſorption is increaſed, and their contents largely evacuated. But ſomething elſe muſt be done, or little or no advantage would reſult from it. Mr. Hunter's theory, that two diſeaſed actions cannot exiſt in the ſyſtem at the ſame time, but that the greater muſt overcome the leſs, is ſtrictly true; but even this is not ſufficient to account for the effects of mercury in this as well as in other

diſeaſes, for we have ſeen inſtances of recovery under very different and oppoſite treatment. The only mode of aſcertaining it would be, to give ſome other ſubſtance which contains a much larger proportion of oxygen, and which parts with it more readily than mercury; as the oxygenated water of the French chemiſts, for example. The caſe read before this ſociety on the 1ſt October, 1802, by my friend Dr. Auld, goes far to prove, that vital air is ſufficient to ſubdue this terrific ſcourge and peſt of the human race. If our ſociety was to undertake a critical examination of the nature of this diſeaſe, and the remedies beſt adapted to its cure, it would do itſelf honour, and render to poſterity an eſſential ſervice. I muſt candidly confeſs that I am at a loſs to account for the modus operandi of mercury in this diſeaſe; at leaſt ſatisfactorily to my own mind. Experiments, and future obſervations and experience, muſt relieve the uncertainty.

In the month of *September*, there were 125 interments; 64 of which were of white perſons, and 61 of black; and of the black, 23 were new negroes.

In the month of *October*, a few caſes of endemial cauſus occurred in the city. One of the caſes as recorded on our Journal, occurred in a child of 18 months old, who had eſcaped the diſeaſe the preceding ſummer. Another child, who had never been in the city, died of the diſeaſe in Cannonſborough. Natural ſmall-pox and dyſentery alſo prevailed.

In conſequence of the heavy rains which fell in the month of September, and filled all the pools and holes in the vicinity of the city, the inhabitants in the weſtern ſuburbs were, generally, afflicted with intermittents. Nine inches of rain fell in September. In this month there were 55 white perſons buried, and 63 blacks; and of theſe 22 were Africans.

The month of *November*, generally, was healthy; inflammatory ſore throat, catarrhal fevers, ſmall-pox, natural and inoculated, croup and rheumatiſms were noticed on our journal. In the beginning of November, the fruit trees were in bloom.

The rapid improvement of our city, both in buildings and gardens, as well as in the filling up of many pools of ſtagnant water, has, and will continue to decreaſe the cauſes of diſeaſe. More attention is now paid by the *police*, to the cleanlineſs of the ſtreets and drains, and much good has already reſulted therefrom.

The hotteſt days which we have had ſince our laſt anniverſary, were in the month of Auguſt. The mercury on the 16th, roſe up to 91°. The mean heat was 84°. On the 10th of July it roſe to 91°, but the month, generally, was cooler. The coldeſt day was on the 22d January, when the mercury, *out of doors*, ſunk to 16°, wind at north-weſt. The mean degree of heat during the year was 59°.—Leſs rain has fallen in this year than in the laſt; there fell 36 inches and $\frac{8}{10}$ths.—Leſs thunder occurred than in the preceding year.—The prevailing winds, were N. E. and S. W.—There were 17 days in the year when the hygrometer indicated a dry ſtate of the atmoſphere.

The ſickly months may be arranged in the following order, July, September, October and Auguſt. The aggregate number of deaths in thoſe months was 473; but as 90 of thoſe were new negroes, whoſe complaints are peculiar to themſelves, and who, for the honor of humanity, I hope will not always be admitted among us; they do not go to prove the unhealthineſs of the city. The number, therefore, ought to be 383 in the four ſickly months, which is a fraction over three a-day. A very trifling number in a city, whoſe population is about 20,000. From the church records it appears, that 34 deaths from *endemial cauſus* occurred laſt ſummer; 2 in Auguſt, 21 in September, and 11 in October.

The year 1805 is remarkable for the deaths of many aged perſons.

Mrs. Cordes,	aged 80	Mrs. Johnſon,	aged 65
Mr. Carnes	76	Dr. Symmes	60
Mr. Chambers	60	Mr. Paxton	91
Mr. Smith	60	Mrs. Morgan	91
Major Bowen	63	Captain Stiles	60
General Gadſden	82	General Moultrie	75
Mrs. Williams	85	Mrs. Dubois	69
Mrs. Jones	80	Mrs. Minott	64
Mr. Jacoby	60	Mr. Griffin	75
Mr. Armſtrong	61	Mrs. Sheely	95
Dr. Polony	62	Mr. Cohen	70
Mr. Lee	68	Mr. Hicks	69
Mrs. Ravenel	73	Mrs. Lehre	77

making in the aggregate 26 perſons, whoſe ages amounted to 1871 years.

The above obituary record is of very high importance to Carolina. Many of the perſons were foreigners, who had lived among us for many years, and who, probably, arrived at as advanced ages, as they would have done in their own country. After the firſt change of temperature, and the humidity of our atmoſphere have been overcome by prudence and care, there is not a country where the enjoyments of health are greater than here.

Who after this will preſume to charge our city with unhealthineſs, or accuſe it of being the hot-bed of diſeaſe, and inimical to health and longevity? If the well known hoſpitality of the inhabitants, ſhould, ſometimes, ſeduce an unguarded youthful ſtranger to irregularity and diſſipation, and diſeaſe, and death ſhould enſue; let it not be aſcribed to the unhealthineſs of the climate, but to the open, generous feelings of benevolent

hearts, which hail the welcome ſtranger to the board of hoſpitality. It is well known to you, gentlemen, that many of our caſes of *endemial cauſus* have been the reſult of expoſure to the damp, midnight air, when the ſyſtem was exhauſted by indirect debility. Have we not ſeen the Herculean European, expoſing himſelf to the heat of our mid-day ſun, regardleſs of the importunities of his friends, unheedful of the dreadful conſequences which awaited him; placing his *ſpes et ſolatium*, on the ſtrength of a conſtitution unknown to diſeaſe, and whoſe irritable fibres are eaſily excited into morbid action, by the application of unaccuſtomed ſtimuli? Would not the wonder have been, if they had not been attacked?

The citizens of South Carolina, have twice been called upon in the paſt ſummer, to follow the biers of departed heroes and patriots. The tear of ſenſibility muſt flow for our bereavement; but our hearts will proudly exult at the grateful recollection of the important ſervices of thoſe great men, during our national ſtruggle for liberty and ſovereignty. Faithfully had they ſerved their country, and, during a long life of uſefulneſs and labour, they continued their exertions for their country's weal. Deeply impreſſed upon our hearts will forever remain, the names of GADSDEN and MOULTRIE.

Let us, gentlemen, cheerfully and reſolutely determine to make our ſociety as uſeful as it is reſpectable—to make it the ſchool of inſtruction, and the depoſite of important information for our poſterity.

The ardent purſuit of ſcientific information, while it adds reſpectability and honour to a country, is of incalculable advantage to individuals. It is a mine of immeaſurable depth; an inexhauſtible ſtore of uſefulneſs and profit. The human mind, vaſt and capacious in its reſources, is bounded by no limits, but

the GREAT FIRST CAUSE, and yields to no impediments, but the diſorganization of matter. The heart expands with virtue and benevolence, as the mind extends its information. The riches of the ancients become our property, and the labours of the learned, become our amuſement. Compared to the learned of the preſent day, the ancients were but the pupils of ſcience; and we, in our turn, will have to yield the palm of knowledge to thoſe who will ſucceed us, and who, probably, will look back upon us, but as the removers of literary rubbiſh, or the pilers up of disjointed facts.

I ſhall now, gentlemen, take my leave of you, wiſhing, with much ſincerity, that our ſociety may add to the ſtock of uſeful information, and, that individually you may long live to enjoy the rich reward of your merit and of your labours.

Caſe of Chorea Sancti Viti. *By* E. GRIFFITHS, M. D.

JUNE 26, 1806, I was called to viſit Miſs V. a young lady aged thirteen years; afflicted by Chorea Sancti Viti. Her mother gave me the following hiſtory of the patient, viz. That in the beginning of the winter of 1803-4, her daughter fell on a ſtair-caſe and ſtruck the back part of her head with great violence, as ſhe was informed by one of her ſchool-mates. This accident was not mentioned till ſome time afterward.

When four days had elapſed, ſhe was obſerved to be very unſteady in her manner of walking, with a twitching of her arms, toſſing her head, dragging her legs, &c. Theſe ſymptoms increaſing very much, a reſpectable phyſician was conſulted, who gave her every attention and aſſiſtance in his power. However, the diſorder became very violent and obſtinate, but was finally conquered after ſome months ſtanding; and ſhe

was completely reſtored to health by a voyage to the Weſt Indies. In the courſe of laſt winter the diſorder returned, but in a ſlight degree, and diſappeared in a week or two, without any medical aſſiſtance.

On examination, I found her pulſe ſoft, natural, and rather weak; ſkin of the natural temperature, tongue white and moiſt; pupil of the eye ſomewhat dilated; viſion ſo much impaired as to prevent her from reading, or diſtinguiſhing ſmall objects; bowels regular, and ſhe has a craving appetite.

She is in continual motion, the legs, arms, head, trunk, eyes, lips, tongue, &c. are ſuddenly changing their poſition, ſo much ſo, as to render the articulation, and appearance of the patient, ſingularly diſtreſſing. The right ſide is ſenſibly more affected than the left; ſhe rather hobbles ſide foremoſt, with the toes of her ſhoes pitching againſt the floor every ſtep, than any thing like walking. She has lately complained of ſlight pains of the head, ſhoulders and knees, but not ſo much as to excite attention. The patient has been ill about two weeks; has ſlept but little in that time, but is perfectly ſtill when aſleep; the cold bath has been tried, but without any benefit.

℞. Sacch. ſat. ℈ j. pulv. gum. opii grs. ijſs. elect. lenitiv. q. s. m. f. maſſ. in pillul. No. x, dividend. Take one pill every third hour; rub the ſpine and ſtomach with laudanum and ſpirits of turpentine.

27th. She reſted well from early bed-time laſt night, till late this morning. No ſenſible change except being more cheerful than yeſterday. Continue the medicine.

28th. She has been awake moſt part of the night till toward morning, when ſhe had a ſound ſleep of two or three hours. Symptoms as yeſterday; appetite good, and is indulged as in health. Continue medicine and uſe the cold bath.

29th. Symptoms as yeſterday; reſted well. Continue medicine, and bath. She this day eat cherries very freely, without permiſſion.

30th. Was ſeized laſt evening with vomiting, and diſcharged a conſiderable quantity of bile from the ſtomach; ſhe was thirſty through the night, and did not ſleep any. Looks pale, pulſe weak, and ſhe is leſs agitated than formerly. From a ſuſpicion that the fall, formerly mentioned, was the cauſe of the complaint, a bliſter was applied over the whole head, and tartar emetic, one third of a grain, given every hour.

July 1ſt. She reſted extremely well laſt night, is free from nauſea, but has no appetite. All the ſymptoms very much amended. The emetic tartar is continued without producing any uneaſineſs.

2d. Appetite returned, pulſe natural; the medicine purges briſkly. Continue the medicine, with 10 drops of laudanum in the day, and 25 at night. Dreſs the bliſter on the head, with cantharides.

3d. Symptoms rather better than yeſterday. Great appetite, pupil a little dilated; bowels regular; complains much of the bliſter. Go on with the tartar emetic, and take 15 drops of laudanum at night.

4th. She had but little ſleep laſt night, but reſted well till late in the morning. The involuntary motions are ſo much better, that ſhe can read, and articulate pretty well; the muſcles of her eyes, face, neck, &c. are very little moved; but the right ſide continues worſe than the left. Complains the laſt two or three days of itching very much after taking laudanum.

5th. Took thirty drops of laudanum laſt night, but reſted very little. She is rather better than yeſterday. Continue the antimonial medicine and omit the laudanum.

6th. The bliſter was renewed on the head laſt night, and diſcharges copiouſly. She reſted very well although no anodyne was taken. The patient has been able to feed herſelf with the right hand this day, for the firſt time ſince her indiſpoſition. Continue the antimonial medicine.

7th. Slept well laſt night. The tongue begins to throw off the white fur; otherwiſe is as well as yeſterday. Continue the medicine and take 30 drops laudanum at bed time.

8th. Has had a very reſtleſs night, and vomited this morning, which is aſcribed to the laudanum taken laſt night.

9th. Took no anodyne and reſted very well laſt night. No ſenſible alteration in the diſorder. The bliſter is nearly dried up. Continue the antimonial medicine.

10th. Since the diſcharge from the bliſter has ceaſed, I think her diſorder a little aggravated.

11th. The involuntary motions ſenſibly increaſed. As the tartar emetic has not produced nauſea, I directed tartar emetic half a grain every 15 minutes, till four grains were taken, without producing the ſlighteſt nauſea. It purged briſkly, and lowered the pulſe. At this time the patient's brother was ſeized with a fever which diverted all the family's attention from her to him. She remained about as we left her, without taking any medicine till July 21ſt, when ſhe was directed to take a tea-ſpoonful of the following, every two hours, in molaſſes. ℞ Pulv. cort. Peruv. ℥ j. pulv. carbonat. ſod. ℥ ſs. m. The medicine was continued, and on the 2d of Auguſt ſhe went to the country ſo well as to have ſcarcely a ſymptom of her diſorder left. I have not heard from her ſince.

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Obſervations on the American Alligator. *By* JAMES MEASE, M. D.

ALLIGATORS abound in the rivers and ſwamps of Georgia, and N. and S. Carolina, and thrive equally well in ſalt and freſh water. I ſpent the laſt winter and ſpring, (Dec. to May,) in the iſland of Great St. Simon, on the ſea coaſt of the ſtate firſt mentioned; and having frequent occaſions to go up the river Altamaha, about fourteen miles from its mouth, I muſt have ſeen at leaſt 200 alligators in the courſe of five months, whilſt they were either baſking on the banks of the river, or floating on the ſurface of the water. They were of every intermediate ſize between eight or nine feet, and ſix inches in length. I ſhot ſeveral; one of them was of the length firſt mentioned, and large in proportion.

On the 15th February, a little after ſunriſe, I perceived the animal lying on the banks of a creek, which has lately been cut through the iſland of Little St. Simon's, and apparently in a ſound ſleep, for his eyes were cloſed, and he permitted the barge to approach within about fifteen feet of him; and gave me time to

load both barrels of my fowling piece. His body being covered with a coat of mail, he was ſecure from the impreſſion of even a muſket bullet; but the pliability of the ſkin under the fore paws affords an eaſy entrance to buck-ſhot, which if well directed, ſeldom fail to kill, or at leaſt ſo effectually to ſtun them, as to permit the accompliſhment of their death by the hatchet; and as the extended poſition of the one I am now alluding to, afforded me a fine opportunity of diſcharging my gun into his vulnerable part, I was fortunate enough to fire both barrels with ſucceſs. He was ſo ſtunned, as to permit a rope to be tied round his neck, and being without delay dragged into the water, he was faſtened to the ſtern of the boat. As I was about two miles from home, he had time to recover from his ſhock, and ſoon began to plunge and daſh about with great force, and actually impeded the progreſs of the boat to ſuch a degree, that had it not been well manned, I ſhould have been under the neceſſity of leaving him in the water. Being apprehenſive that he would bite off the rope to which he was faſtened, and thus eſcape, I endeavoured to hook his lower jaw with the boat hook; but he twiſted off the handle above the hook in an inſtant, though more than one inch and a half in diameter. When dragged on ſhore, he was ſtill very active, and opened his ravenous jaws as often as a ſtick was preſented before his mouth, and frequently wheeled round with great celerity to face his adverſaries. On opening his ſtomach, I found a parcel of ſilver fiſh (as they are called) one and two inches long; alſo a block of live oak about a pound weight, the end of which had been burnt, and a ſmaller block of white pine, both of which were worn ſmooth. On mentioning the circumſtance to two gentlemen who were preſent (at St. Simons iſland) they informed me, that various ſubſtances are at times found in the ſtomachs of alligators; that chunks of wood were commonly ſeen, and one of them aſſured me, that he had found a piece of red cloth, and the rim of a braſs ſhoe-buckle. I was prepared to meet with various hard ſub-

ſtances in the ſtomachs of hybernating animals, as I well knew that they are taught by the great Author of Nature, the neceſſity of taking in ſuch materials to ſupport their vitality during their torpid ſtate; but I muſt acknowledge that I was ſurpriſed to find them in the alligator of Georgia, conſidering that they always come out of the water in moderate weather, and eſpecially when the ſun ſhines.

Cateſby ſays, that he found pieces of wood ſeven and eight pounds in weight, in the ſtomachs of ſome of thoſe animals; having the angles ſo worn down that he fancied they muſt have lain there ſeveral months.* Dr. Brickel, who publiſhed in 1743, found in the bellies of two alligators in North Carolina, beſides ſeveral ſnakes, ſome pieces of wood, and a ſtone that weighed about four pounds. B. Romans,† and Mr. Ellicott, in his journal, mention the ſame circumſtance, ſo that there can be no doubt as to the fact. Both the laſt mentioned authors, alſo notice the deep hollow noiſe which the alligators make in coming out of the water in the ſpring, and I was aſſured of the ſame fact by perſons who had heard them at night, in May laſt: but having no buſineſs to call me out on the water after dark, and my zeal not being warm enough to induce me to make a nocturnal excurſion on purpoſe to aſcertain the fact, I can only give it on the authority of others.

With reſpect to the hybernating diſpoſition of the alligator; notwithſtanding Cateſby expreſsly affirms that the animal in the ſouthern ſtates remains torpid, from the month of October till March, in caverns or hollows in the banks of rivers, I muſt declare, that with the exception of two or three times, I did not go up or come down the Altamaha, from December to May laſt, without ſeeing thoſe animals; and I may add, that I never

* Natural Hiſtory of Carolina, Vol. II. p. 63.

† Account of Eaſt and Weſt Florida, New York, 1775.

heard of their hybernating diſpoſition from any one in Georgia; and conclude, as well from the ſilence of the inhabitants on the ſubject, as from my own obſervation, that the aſſertion is not correct.

Alligators frequently commit depredations on poultry; but dogs are ſaid to be their favourite food: and an occaſional amuſement with the inhabitants on the ſea board, when on the water, is to cauſe a dog to howl by pinching his ear, in order to cauſe their enemies to exhibit their creſted heads above the ſurface of the water round the boat.

The tenacity of life in the alligator, if life it may be called, is very great, and in this reſpect, fully equals the tortoiſe. One hour and a half after the head of the one I mentioned before to have killed, had been ſeparated from his trunk, I preſented a ſtick to the mouth, when it opened half its ordinary width: the irritation of the mouth was repeated ſeveral times with a ſimilar reſult.

I heard of no injury ſuſtained by any perſon from their bites; probably becauſe people do not expoſe themſelves to their attacks in the water; but I can anſwer for their ſhyneſs when on ſhore; for in general it required ſome adroitneſs to obtain a ſhot at them, as they conſtantly ſlid down the banks into the water, when they perceived the approach of a boat. In other countries,* however, they are ſaid to attack perſons bathing in rivers.

They emit a very ſtrong and diſagreeable muſky ſmell; but this quality forms no objection to them as an article of food with the newly imported Africans; for when I had the head boiled on the bank, in order to preſerve its ſkeleton, ſome new

* In Manilla. *See Navarette's Travels.*

negroes who had but lately arrived from Charleſton, eagerly devoured the fleſh as it was cut off, and actually contended for it. The tail, however, as I was told by ſeveral perſons, is free from the muſky ſmell, and I know ſome who eſteem it a delicacy little inferior to turtle, when cooked in the ſame way as that rich ſhell-fiſh!!

Their teeth are remarkably white, and conſtitute a favourite necklace with the blacks, for their children, on the ſuppoſition that they eaſe the proceſs of dentition. I could not but ſmile at the weakneſs which leads them to the uſe of the ſilly charm; but when I recollected how many among the whites, poſſeſſing the advantages of greater light and information, religiouſly believe in the power of the Job's-tears necklace in the ſame caſe, and alſo in that of the blood ſtone (hæmatites) to check or prevent bleeding from the noſe or lungs; my idea of the negro weakneſs was conſiderably leſſened.*

The alligator lays its eggs in the woods, or in marſhes near the rivers, and leaves them to chance. A few days before I left the coaſt of Georgia, (in May,) two young ones were found in a wood near a creek, and brought to me. They were apparently not long before hatched: their bodies were about four inches long, and their tails about five inches. When I preſented a ſtick to their jaws they opened them, and exhibited teeth already prominent. I endeavoured to preſerve them alive during my voyage, but the rolling of the veſſel occaſioned their death.

* To the inſtances above mentioned of Chriſtian weakneſs, might be added, that of the belief in the powers of the ſnake ſtone, to extract the poiſon of venemous or rabid animals, by applying it to wounds made by them, a belief which is univerſal in ſome parts of Virginia. More on this ſubject, however, hereafter.

On the Adulteration of Britiſh Malt Liquors. By JAMES MEASE, M. D.

THE very excellent effects we often derive from the uſe of porter as a remedy in diſeaſes, renders the preſervation of its purity an affair of very great importance. Hitherto, when occaſion required our preſcribing porter as a drink, it has generally been the practice to recommend that article of Britiſh manufacture, from a deep-rooted prejudice in both phyſician and patient, that it was ſuperior to our own in the important points of ſtrength and flavour. There have been, however, ſome among us, who being devoid of prejudice, were candid enough to acknowledge, that the Philadelphia porter had greatly improved within the laſt fifteen years, and have contented themſelves with uſing our home-made ſtuff. Some amuſing experiments too, which were occaſionally practiſed upon the "knowing ones" have ſerved to convince us that the power of diſtinguiſhing between the domeſtic and imported article was not ſo eaſy as they thought.*

Some men of taſte among us, had even imagined, that they perceived within a few years an evident diminution in the quality of Engliſh porter, and that inſtead of being a lively, invigorating cordial as formerly, it was thick, laid heavy on the ſtomach, of an unpleaſant taſte, and never failed to confuſe the

* The ſame prejudice prevailed with reſpect to Cheeſe, and the praiſes of the Glouceſter and Cheſhire manufactories have reſounded all over the world: the only reaſon for which was that the Italian and Dutch cheeſes were not made in quantities ſufficient to compete with the Engliſh in foreign markets. The offer of a premium from the Agricultural Society of Philadelphia in 1790, which was obtained by Mr. Matthewſon of Rhode Iſland, ſoon taught us that as good cheeſe could be made in the United States as in any part of the world. At preſent the manufacture of Capner and Choyce of Flemington, and of Exton of Pittstown, New Jerſey, is *much ſuperior to any imported, whether Britiſh, Italian, or Dutch.*

head upon taking an extra-drink. Unwilling however to truſt their own judgment, they were diſpoſed in ſome meaſure to aſcribe the alleged alteration, to their being ſo much accuſtomed to our own weak liquor, as not to reliſh the powerful ſtuff of the Britiſh breweries. I know one gentleman, indeed, who poſitively aſſerted the manifeſt falling off, of foreign porter, and from being a conſtant cuſtomer, gave it up inſtantly. The truth upon this ſubject is now divulged. We all know, that the exciſe upon hops and malt, are permanent ſources of revenue in Britain; and that it has been gradually riſing from year to year until the preſent day; it appears alſo from the agricultural reports of the different counties in England, which were drawn up by order of the national board of agriculture, that the hop culture is extremely uncertain, and that for ſome years paſt, the produce has not been nearly equal to the demand: from the combined effects, therefore, of high firſt coſt of the hops, and exceſſive duties upon them and malt, the *brewers* have *ceaſed to employ either;* but as porter and beer are univerſal drinks in England, ſome ſubſtitutes were neceſſary, and it appears from a publication in an excellent work entitled "The Agricultural and Commercial Magazine," now going on in London, that a plant known by the ſeveral names of May-weed, Morgan, Gooſe-weed, has been long ſubſtituted to great advantage for the hop, and that a man in Derbyſhire acquired an independency by excluſively cultivating it for the purpoſe ſtated. See the above work, Vol. III. p. 14. But of late more injurious ſubſtitutes have been employed, which ſufficiently account for the evident falling off of Britiſh malt liquors. In "Malcolm's Huſbandry" lately publiſhed, after acknowledging that "beer, ale, and porter, have received greater deterioration ſince the ſeaſons of 1800 and 1801, than they had experienced from the time of Henry I. to that period," it is ſaid, "the reaſon is, that neither HOPS nor MALT are now uſed in the manufacture. The ingredients of the former, he ſtates to be "grains of Paradiſe, Capſicum, black pepper, Cori-

ander ſeed, *Coculus indicus*, (an intoxicating drug) Quaſſia, *Liquorice, brown ſugar*, SHAG TOBACCO, *Sal martis* (or green vitriol): and among the materials of the latter, he enumerates the following; *Coculus Indicus*, liquorice or Spaniſh juice, treacle, SHAG TOBACCO, alum, green vitriol, iſinglaſs and quaſſia.

Mr. Malcolm is land-ſurveyor to the Prince of Wales, and the royal Dukes of York and Clarence: his aſſertion therefore muſt be taken as true, for it is not to be ſuppoſed that a man of his reſpectability would riſque the expoſure of ſuch an impoſition, unleſs he was well aſſured of the grounds upon which he made it.

From Barrow's intereſting travels in Africa, it appears, that "Aloes has of late years been much employed in the porter breweries of London, which has occaſioned an increaſed demand for the article.*

But if any confirmation be neceſſary of the aſſertion reſpecting the diminiſhed ſtrength and adulteration of Britiſh porter, it may be obtained by a reference to the "*Commercial Report*," regularly publiſhed in Philip's Monthly London Magazine, which is ſaid to be conducted under the direction of the juſtly celebrated Dr. Aikin. After giving a melancholy account of the dearneſs of coal, meal, and other common neceſſaries of life, the writer adds, "Porter when of proper ſtrength and age, ſo excellent a beverage for the labourer, is by the impoſts levied on it and on malt, now ſo poor a ſtuff, that a working man thinks it neceſſary to ſwallow immediately after his

* The *aloe perfoliata*, from the juice of which, by inſpiſſation, the well known drug Aloes is prepared, is a ſpontaneous production of ſouthern Africa, where large tracts of ground, many miles in extent, are covered with it. The quantity of inſpiſſated juice, exported from Cape town in four years, (1799 to 1802,) amounted to 341,927 lbs. value 25,665,4 rix dollars. *Barrow's Travels*, p. 305.

beer, a glaſs of poiſonous gin, to hinder the former from doing him harm.*

The neceſſity for ſuch an obſervation at that time is the more remarkable, becauſe it appears from another report that the crops of hops in 1803—4, were the two largeſt ſucceeding each other ever known.† The crop of 1805, was as bad as that of the two preceding years was good; blaſt, fly, lice having aſſailed it.‡ "The crop," ſays the writer, "is found not to be equal to a quarter of a year's conſumption; the deficiency muſt therefore be ſupplied by the ſtock on hand of the growths of 1803—4, and it is calculated, that after this year's (1806) conſumption, there will not be more than half a year's conſumption left of all ſorts to meet the next year's crop.§"

From the above extracts, we find that even in the moſt abundant years, the demand for hops is either greater than the poſſible ſupply, or that in order avoid the enormous duty on the article, malt liquors, (ſo called,) are manufactured without it, and others ſubſtituted, ſome of which poſſeſs highly injurious qualities, which ſhould induce us entirely to prohibit the uſe of Britiſh porter, or ale, to our patients. This we may do with more advantage, becauſe the manufacture of thoſe liquors in Philadelphia, has arrived to as great a degree of perfection as is requiſite either for the purpoſes of health or gratification.

* Monthly Magazine, January 1804.

† Monthly Magazine, March 1805. The produce in 1803, amounted to 199,205 bags; and in 1804, to 177,617. The duty upon the laſt crop was £.386,124,19.5½: In 1802, hops ſold for £.16 to £.20 per bag!

‡ Monthly Magazine, Auguſt, September and October, 1805.

§ Monthly Magazine, March 1806.

Account of the Efficacy of the external Application of the Geranium Maculatum, in ſtopping Hemorrhage. By JAMES MEASE, M. D.

THE following are the particulars of the caſe of hemorrhage, cured by the application of crow-foot or geranium maculatum, which occurred under the notice of Paul Cooper, of Woodbury, New Jerſey, and mentioned in my paper, in one of the numbers of your Muſeum.

The ſon of Mr. David Cooper, near Woodbury, partially divided the artery at the wriſt with the point of a hatchet in trimming a tree; the wound bled profuſely, and an aneuriſmatic tumour of the ſize of a pullet's egg, was quickly formed. Dr. Hendry, who was immediately called, applied the tourniquet, and alſo a piece of flat lead to the tumour; and apprehending that the uſual operation would be neceſſary, requeſted the aſſiſtance of Dr. Wm. Shippen from Philadelphia. On the arrival of that gentleman, the operation was reſolved on; when the father of the young man inſiſted upon the trial of a vegetable remedy, which he ſaid he had learned the uſe of from one of the aborigines of our country. He immediately repaired to the woods, and returned with ſome of the ſpecific, which was pounded in a mortar with a little cold water and applied to the part, and in a ſhort time, to the great ſatisfaction of the ſufferer and his friends, immediately checked the bleeding. The tourniquet was left on as a precautionary meaſure, but fortunately no occaſion offered for uſing it. In the courſe of a few days the wound healed, and the young man had no further trouble.

Dr. Hendry, from whom I obtained the above particulars, alſo verbally communicated to me the following caſes.

1. A man in pruning a tree divided the ſtout muſcles of the fore-arm in an oblique direction: the wound was full four inches

in length, and bled profuſely from a large artery, and numerous ſmaller veſſels. His ſhirt ſleeve was filled with blood, for being made tight round his wriſt and fore-arm, it prevented the blood from eſcaping, and forming a coagulum round the bleeding orifice, checked for a ſhort time a further effuſion.

The powerful effects produced by the *geranium* in the former caſe, induced Dr. Hendry to apply it in the preſent: accordingly he procured ſome of the roots, and after waſhing and pounding them, filled the wound therewith: the effect upon the ſmaller veſſels was almoſt inſtantaneous in checking the profuſion of their contents; and the bleeding in a ſhort time entirely ſtopped; and although as in the former caſe, the tourniquet was very properly permitted to remain, yet no occaſion offered for uſing it.

2. Another caſe occurred of a wound in the ankle from a ſcythe, which had bled ſo profuſely as to cauſe the man to faint; but on the application of the geranium by Dr. Hendry as above, it ceaſed in a ſhort time.

3. In the inſtance of a violent vomiting of blood, which had reſiſted a variety of remedies, an infuſion of the plant in water, produced the deſired effect in a few minutes.

4. Another inſtance mentioned to me by Dr. H. of the aſtringent effects of the geranium, was that of a young man who had a moſt obſtinate hemorrhage from the ſocket of a jaw tooth which had been extracted. An attempt was made by a phyſician from Philadelphia, to cloſe the bleeding orifice by burning it with a red hot needle, but without effect; on the application however, of the geranium, the bleeding ſoon ceaſed. In conſequence of the virtues of the geranium having been ſo often experienced about Woodbury in caſes of hemorrhage, the inhabitants have been induced to cultivate the plant in their gardens; and it

would be well if their example were followed by every one in the country, for though providence has diffuſed the valuable plant over every part of our country, yet as it grows principally in the woods, and the accident it is intended to relieve may admit of no delay, and often happens in winter when the plant cannot be found, it ſhould be transferred to every garden, that it may be at hand when wanted.

Caſe of Paralyſis, apparently cured by Mercury and Bliſters. By E. Griffiths, M. D.

JUNE 30th, 1806, I viſited C. B. a boy aged ſeven years. On the 27th inſtant, he complained of a ſtiffneſs and inability to ſtraighten his fingers. In the morning of the 28th, his mother noticed him and his brother playing in bed, to all appearance perfectly well; but on taking him up he fell on the floor; ſhe ſet him on his feet again, when he fell a ſecond time. It was now obſerved, that he had loſt all muſcular ſtrength in his lower extremities; the whole ſpine from his head downward was ſo weak that he could not ſit upright or ſupport his head. He retained the power of voluntary motion in his ſhoulders and elbows; his hands were quite uſeleſs, with the fingers immoveably half clenched. His reſpiration, deglutition and ſpeech were unimpaired; ſenſes and mind natural and healthy; no fault in the ſphincter ani; he paſſes water very ſeldom, but feels no inconvenience from the long retention, and it is in rather ſmall quantity. His tongue is white, otherwiſe he has no ſymptom of indiſpoſition about him, except the above mentioned.

I examined the ſpine accurately, but could diſcover no fault in it; the family had not heard any complaint whatever; from

all which, as uſual, worms were blamed. I gave him valerian and calomel freely; it purged him, but brought away no worms.

July 1ſt. Symptoms as yeſterday. ℞ pulv. ſal. nitri, grs. x. tartar emetic gr. ⅛ every two hours.

2d. Symptoms as yeſterday; continue medicine, and apply bliſters to the ankles. A ſlight eruption begins to appear on the forehead.

On the 3d and 4th, he complains of ſome ſtrangury from the bliſters. The medicine is continued with the addition of cal. gr. 1 to each doſe.

The 5th. Bliſters to the wriſts and continue medicine.

On the 8th, I obſerved his gums a little ſwelled. The eruption has ſpread all over him except the thighs and legs; itches very much and looks very red. He has much more command of the voluntary motions, and is ſtronger than heretofore, except the feet and ankles which he has no power over, but they are perfectly ſenſible to any injury offered them.

9th. His pulſe is more than uſually active, with a ſlight yellowneſs of the tongue. Continue medicine, and apply muriate of ſoda to his feet.

17th. His medicine has been continued without producing a ſalivation. Many of the eruptions have ſuppurated and are drying. He can move his feet and toes a little, and begins to walk with the help of ſome perſon to ſupport him under the arms. The family now informed me that the patient, when well, was very fond of imitating tumblers, and always trying to ſtand on his head. I preſcribed a large bliſter to the nape of the neck, and omitted the medicine.

On the 18th, he was able to raiſe himſelf on his ſeat in bed without help; the 19th, he ſtood alone and walked a little, ſteadying himſelf by holding his father's hand.

Another bliſter was applied on the lumbar region on the 26th. His amendment has been very rapid ſince. He is able to walk very well about the houſe alone; he rode in a carriage five miles out of town and back, on the afternoon of Auguſt 1ſt.

He was now ſent to the country, where he was recovering his ſtrength rapidly, as I was informed ſoon afterwards.

Caſe of abdominal Swelling, cured by the Application of Nicotiana, or common Tobacco. Tranſlated from the Italian, and communicated to the Editor, by E. CUTBUSH, M. D.

A YOUNG woman, aged 23 years, of a temperament inclining to the ſanguineous, relates, that in the early periods of her infancy, a ſwelling was obſervable in the vicinity of the epigaſtric region, which prevented her parents from binding her with the *ſwathe-band*, at that time in uſe. As ſhe approached the age of puberty, the tumor increaſed, and ſhe menſtruated with great *uterine* pain; it then diſappeared for ſome months, and produced flattering appearances of the entire removal of the diſeaſe. Her menſtrual diſcharges were not regular, and were ſmall in quantity; preceded, and accompanied, by the moſt terrible ſpaſmodic contractions; after the diſcharge of a ſmall quantity of mal-conditioned blood, the vagina ſuffered very much by an acrid humour, which corroded its delicate membrane, and which has continued, more or leſs, to the preſent period of her age.

The tumour, in the above deſcribed part, appeared again of greater ſize, but did not ſpread, in the courſe of eight years, except on certain occaſions, when the *nervous contractions* affected the internal parts of the abdomen; that in ſuch circumſtances, the patient complained of a ſenſe of *ſtretching*, in the functions of the diaphragm, and of ſuffocation. The tumour was, therefore, declared by ſome to be the effect of *hyſteric cramp*; in fact, the ills which tormented this unhappy damſel, were truly Proteiform. She ſometimes complained of general pain in her joints, as though they had been ſuddenly broken, at other times, of a diffuſed ſwelling of her abdomen. She was, at length, attacked with fever and maraſmus, accompanied by eruptions reſembling ſyphilis: to this ſucceeded another phenomenon, which is worthy of remark; a ſuppuration commenced around the nails of her fingers, one after the other.

Laſtly, when in the 21ſt year of her age, the diſeaſe unfolded itſelf with general *convulſions*, in all the voluntary motions, producing at the ſame time, clonic and tonic convulſions: the abdomen was diſtended ſimilar to tympanites, a convulſive dry cough, frequently threatened ſuffocation. She ſuffered very much by a total loſs of appetite; ſmall quantities of nutriment, ſolid or fluid, irritated her ſtomach, and were *frequently* diſcharged as ſoon as they were taken, in an unchanged ſtate; even ſimple water was not retained. Frequently in the day when attacked with convulſions, aphonia and blindneſs, were common ſymptoms, but her hearing was exquiſitely ſenſible. She complained of a general tremor, which was moſt troubleſome at night; the convulſions were more or leſs violent, one hour before, and after ſunriſe.

Before, and at the period of her difficult menſtruation, ſhe complained of moſt "cruel ſenſations" in the vicinity of the uterus, and during the ſanguineous diſcharge, the ſpaſmodic pains increaſed, and were moſt violent, when the general con-

vulſions ceaſed. The *nervous tympanites* in this ſtage, was more painful and hard. The continuance of this tragic ſcene, impaired all the functions of the animal economy, and obliged her to keep her bed. The diſeaſe baffled the moſt efficacious means that the medical art could afford; opium was at length given, to allay the convulſive tremors, in the daily uſe of which, ſhe paſſed eight months: in the ſpring of 1805, her frame appeared to have acquired vigour, ſhe left her bed daily, and at length, was enabled to walk. The *tympanitic tumour*, or rather the *hyſteric cramp*, maintained its former appearance, and obliged her to keep her bed, before and after menſtruation.

At this period of her diſeaſe, ſhe conſulted Edward Cutbuſh, M. D. ſenior phyſician of the American marine hoſpital at this place, who ordered the freſh leaves of nicotiana, boiled in vinegar, to be applied to the abdominal ſwelling, by which the tumour was *totally* diſperſed, and the painful contractions within the abdomen removed; no part of the diſeaſe remains, (except a ſlight ſyncope, which daily affects her towards evening,) a troubleſome watchfulneſs, want of appetite, and a looſeneſs in her bowels.

Syracuſe, July 1805.

The above is an abſtract of a circular letter, directed to different parts of Sicily.

SIR,

IN conſequence of the earneſt ſolicitation of the parents of the young woman, whoſe caſe is above ſtated, by one of her phyſicians, ſhe was brought to my houſe in Syracuſe, to be examined. I received from herſelf and parents, a hiſtory of her caſe, which correſponded very nearly with the above ſtatement. Her parents informed me, that they had conſulted 33 phyſicians and ſurgeons of Naples, and different parts of Sicily,

without receiving any advantage; ſome were of opinion, that the ſwelling was owing to a collection of water in the uterus; others, in the ovaria; others, that it was an enlarged liver; finally, two or three were ſtrongly impreſſed with the idea, that it was an *extra-uterine fœtus*, which produced all the diſtreſſing ſymptoms above ſtated.

On examination, I found a very large ſwelling extending from the epigaſtrium, in a diagonal direction, to the anterior ſpinous proceſs of the right ilium. The tumour had a number of inequalities on its ſurface; no fluctuation could be felt; ſhe could not bear it preſſed without ſuffering great pain. I muſt confeſs, I did not give any deciſive opinion on the caſe, it being perfectly new to me, and eſpecially, after the numerous contradictory opinions and practice of the firſt phyſicians of Naples and Sicily had failed in giving relief; ſhe had been twice under the liberal uſe of mercury in Naples and Syracuſe; in the latter place, by direction of a ſurgeon belonging to lord Nelſon's ſquadron, when his lordſhip was there in 1798, without any beneficial effect. From the hiſtory and examination, I entertained no hope of relieving her; but the ſolemn entreaties of her parents determined me to make trial of a remedy, which I had found uſeful in diſcuſſing obſtinate tumours, and which finally terminated a diſeaſe, that had been the ſource of great diſtreſs to the unfortunate female, and which, doubtleſs, proved the diſeaſe to have been an hydropic affection of the uterus, or right Fallopian tube, though no undulation could be diſcovered. I directed the leaves of the nicotiana, recently collected, to be ſtewed in vinegar, and applied to the abdominal ſwelling. The firſt application produced, nauſea, vomiting, vertigo, great depreſſion of muſcular ſtrength, copious perſpiration, and a looſe ſtate of the bowels; her pulſe became very ſlow. In conſequence of the violence of the above ſymptoms, the application was not long continued;—but on the ſucceeding day, it was repeated, morning and evening, and produced

all the above ſymptoms, but in a leſs degree, attended with an immenſe flow of water from the *vagina*. The application was continued twice a-day, for one week, when its effects on the ſyſtem were leſs powerful, but I was informed with the moſt rapturous expreſſions, that the tumour had diminiſhed very much. The day following a prieſt was diſpatched to inform me, that the water was continually running from her as ſhe walked her room. The remedy was continued about 20 days, but the ſwelling diſappeared entirely before the fourteenth. No medicine was given, except, occaſionally, a ſmall quantity of opium or wine during the day.

When the application of the tobacco was omitted, her abdomen was perfectly ſoft; no induration could be felt in any part, and ſhe could bear it preſſed without pain. She was occaſionally attacked with ſyncope, and complained of want of appetite and ſleep. I adviſed a bandage to be applied around her body, a courſe of tonic remedies, a generous diet to be gradually increaſed, equitation, and cheerful company.

I ſaw her in Octobr 1805, ſhe informed me that all the *functions* of her body were natural; her countenance was florid and cheerful.

April 1ſt, 1806, I was informed that ſhe remained in good health. It is difficult to account for the modus operandi of tobacco in this caſe, unleſs the violent commotion, which it excited in the ſyſtem, ruptured the cyſt, which probably contained the water.

I conceive the external application of tobacco, as a remedy in many diſeaſes, demands more attention from phyſicians, than it has generally received. In obſtinate conſtipation of the bowels I have applied tobacco, ſtewed in vinegar or water, to the abdomen, with the greateſt ſucceſs; even after powerful cathar-

tics, enemata of different kinds, injections of tobacco-smoke or the infusion of the plant have failed, and conceive it preferable in many cases of ascites, to the common mode of administering it internally, in the form of tincture or infusion.

I am, sir,

With esteem, Your's,

EDWARD CUTBUSH.

Philadelphia, October 14th, 1806.

JOHN REDMAN COXE, M. D.

Review of a Work, entitled "Relacion de la Calentura biliosa remitente amarilla, que se manifestò en Filadelfia, en el año de 1793. *Por el Doctor* BENJAMIN RUSH, *Professor de Institutiones y de Medicini Clinica en la Universidad de Pensilvanìa. Traducida de la segunda edicion publicada en Filadelfia, en* 1794, *&c. De order superior. Madrid, en la imprenta real año de* 1804." *or, "An account of the bilious remitting Yellow Fever, as it appeared in the city of Philadelphia, in the year* 1793. *By* BENJAMIN RUSH, *M. D. professor of the Institutes and of Clinical Medicine in the University of Pennsylvania." Translated from the second Edition, published in Philadelphia,* 1794, *by authority. Madrid, Royal Printing office,* 1804. *By* FELIX PASCALIS, M. D. *of New York.*

IN the review of this work we will advert, first, to the preface, secondly, to the catalogue of all the European and American publications on the yellow fever; thirdly, to the critical

notes; fourthly and lastly, to a few dissertations added and introduced for the illustration of the original text.

It would require some explanation to account for what motives the author's name is withheld from a work, which, for national concerns and by authority, is devised and extensively circulated. It is not unlikely, according to Spanish etiquette, that no name was required, while its officiality could not be attributed but to a certain academical rank in the medical faculty. Of that circumstance, however, we are not positively informed; we onlycan affirm that in Spain, the whole work is avowedly attributed to *Sig. Dr. Don Ignacio Ruiz de Luzuriaga*, secretary of the Royal Academy of Medicine, of Madrid.

The claims of this gentleman to a distinguished reputation for medical and literary eminence, were at first established on his extensive education pursued in the principal universities of Europe, under the special order and patronage of the king, and honoured in Edinburgh, Paris, and Montpellier, with the usual academic degrees and adoptions. What other brilliant titles have been accessary to it, beyond the merit of such labour and considerable learning displayed in this production, we do not know. We will only remark, that Luzuriaga having put himself at the head of the importers and contagionists in Spain, has not entered into a luxuriant and fertile soil for philosophical minds to explore. *Observations and facts* are always dubious and perplexing; in the innumerable range of those that can be adduced in controversy, they must lose their authoritative tendency, and ultimately remain unnoticed. Undefined notions of specific poisons in the air, unchangeable as the elementary principles of the atmosphere, are assumed mysteries, totally unconnected with the known laws of nature; the existence, importation, reproduction and different habitudes must constitute another science, with which the whole world is still unacquaint-

ed. Upon what ground or baſis ſhall then this ſcience repoſe; and with what deſcription of philoſophers ſhall the contagioniſts and importers aſſociate themſelves? It cannot be defined. It is to be feared, therefore, that however qualified is our Spaniſh writer to rank high in Medical Philoſophy; his fate is now contrarily decided; he is doomed to an unpropitious ſyſtem for progreſſive inſtruction and diſcovery, and in the ſame proportion, that every day enlightened men of all nations ſteadily advance in the moſt unknown paths, and receſſes in nature, he muſt the more recede from them, be diſtanced and ingloriouſly remain an uſeleſs writer, if not a troubleſome one.

1. The preface of this tranſlation offers, at firſt, an uſeful hiſtorical compendium of the yellow fever. With pleaſure we find in it, ſatisfactory proofs that it had anciently exiſted in Greece and the Archipelago, although in a form of more moderate ſymptoms; that two hundred years after the diſcovery of America, it was obſerved at different periods, in many ports and iſlands of this new world. The ancient belief of the French tracing that peſtilential diſeaſe to their fleet from Siam, is alſo judiciouſly refuted by that only fact, that if imported from that diſtant and hot region, it had not invariably proved more fatal to ſtrangers and Europeans, than to the natives or creoles of Weſt India iſlands and tropical countries.

Let us now ſtate what are the opinions and doctrine of Dr. Luzuriaga, reſpecting the origin of the yellow peſtilence. It muſt be taken for granted, that hoſpital fevers, gaol, camp, and ſhip fevers, are all contagious, and ſome of theſe produced the primitive fomes, which with the action of heat, moiſture, and exhalation, conſtituted the degenerated poiſon of the yellow fever. This aſſertion requires but a few hiſtorical facts, to be vindicated, of veſſels for inſtance, and crews, ſoldiers, and hoſpitals in America, which experienced anciently malignant fe-

vers with great mortality, &c. Thus was the fomes of yellow fever originally produced.

Theſe firſt outlines might, however, ſuggeſt a coincidence with the famous declaration of the Academy of Medicine of Philadelphia, (members all named) which ſtated the yellow fever to be a higher degree of the bilious remitting of hot climates; this doctrine was conſtrued to invalidate any idea of ſpecific contagion, it is of courſe carefully removed by a competent number of written teſtimonies in proof of the eſſential difference of the one from the other.

With the proviſion of all theſe premiſes, our writer proceeds, and argues apparently with much reaſon and conſiſtency, to evince the truth of his favourite theory. Graſping at all the names and noſological definitions which this diſeaſe has received, he finds them all incorrect or unmeaning, until he falls upon the *peſtilential* character. Here he dwells with ſatisfaction, becauſe the "true plague" as he calls it, is the only medium of compariſon to which he can refer the evidence of all our writers, reſpecting certain peſtilential (of the true plague) ſymptoms which we have noticed in our epidemics. Now, he goes farther; all the negative characters of the Yellow Fever we had obſerved; that of being ſpontaneouſly checked or irregularly diffuſed; to break out far and wide, all at once, to ſpare certain deſcriptions of people, and to ſweep all the others; forſooth, they are all genuine characters of the *true plague*, innumerable documents are at hand to prove them to be ſo. Moreover, as well as E. Smith, of New York, could deſcribe the plague of Athens, Lucretius has repreſented that of the United States. Juſt as the inhabitants of our cities, eſcaping from the horrid manſions of contagion and death, could not infect the adjacent countries, the ſame happened in Greece when 4,000 reinforcements ſent by Athens to Potidea never could infect it, although they periſhed 1050, themſelves. Plague and Yellow

Fever, are therefore the ſame diſeaſe, with the difference only of a few ſymptoms. Both are fatal and CONTAGIOUS; both require the ſame ſyſtem, the ſame precautions and ſevere meaſures, to be extirpated from the dominions of his Catholic Majeſty!!!

We muſt confeſs, were it ſo well granted and aſcertained, that the Aſiatic plague is contagious, our controverſiſt would ſtand victorious, yet a while.

"Owing" ſays he "to the many errors which have exiſted, and were conveyed by improper names affixed to the American peſtilence, a ſufficient degree of fear being removed altogether with neceſſary reſtrictions, it was introduced in Malaga in the year 1741, in Cadiz, in 1731—36, and afterwards, in '44 and '46. In this town it was raging alſo during the ſummer and fall of 1764."

Dr. Luzuriaga finds no objection, in the above nor in any other recurrences, to admit the moſt remarkable and ſickly atmoſpheric circumſtances, of heat, moiſture and local exhalations, which, in his theory, are originally and eventually acceſſory, to the formation and developement of the contagious poiſon, as they have the power to extricate it from other fevers, to expand it, and ultimately give it the peſtilential character.

In the intereſting account of the introduction of the Yellow Fever into Spain, during the ſummer of 1800, by the ſhip *Dolphin*, from Havanna and Charleſton; our writer has thus prepared himſelf to meet with, and to overcome every difficulty. An exceſſive heat with unſalubrious winds, after abundant rains, were forming an atmoſpheric conſtitution, than which, being combined with the exotic fomes, nothing could be more fatal. Being however ſuſpicious, that many of the *obſervations* and *facts* adduced to prove the actual importation, would not

bear a severe scrutiny, he takes the wise method of securing a great latitude to all the possible ways by which it might have been introduced. Many other vessels indeed, from Vera Cruz and different ports of the United States, anchored in Cadiz, some time after the arrival of the *Dolphin*, and he declines to decide which of them was the immediate cause of the calamity. He now masterly describes its progress and continuance throughout the southern provinces of the Peninsula. A difficulty is in the way. How Cadiz, the finest, the cleanest, and healthiest spot, could suffer such a severe intensity of the pestilence and proportion of mortality? Why, after her emigrants had infected all the adjacent neighbouring towns, Cadiz remained, as it were, on a central point, opened and exposed to the reach of their combined effluvia, and to their current of pestilential influence.

When relating the succeeding occurrences of Yellow Fever in 1801 and 1803, we are sorry to find our medical observer inconsistent with the principal tenets of his theory, for he adverts no more to any mode of *transmission* or *formation* of the American plague, although it was equally contagious, especially in Medina Sidonia, a large inland and elevated town; certainly, the poison of former years could not have been reproduced after its total extinction, unless it was of *home-engendered nature*. It was, perhaps, with an intention to compensate for that material deficiency, that he immediately relates the history of frequent and spontaneous appearances of the Yellow Fever in the continental Spanish dominions of North America, and in the isthmus.

In terminating his preface, the learned author justly expatiates on the necessity of consulting and examining all the writings relative to a subject of great national importance. That task he could not more faithfully discharge, than by translating one of the most useful productions, the account, &c. by *Benja-*

min Ruſh. To him he dedicates an eloquent, but merited tribute of praiſe and reſpect, delineating his candour as an author, his courage in practice, his fortitude during a perſecuting oppoſition to his doctrines and advice, his accuracy of obſervations and perfect knowledge of the ſubject of the preſent inquiry.

Dr. Luzuriaga reſpectfully propoſes alſo to offer his ſtrictures, to ſubſtantiate his arguments, in every point, in which he muſt differ from the American Profeſſor.

2. The catalogue of Portugueſe, Spaniſh, Engliſh, Dutch, North American and French works, which treat of the Yellow Fever, deſerves a particular notice; it compriſes every intereſting paper or eſſay on that ſubject, that were inſerted in any of the European and American periodical collections. They are all mentioned alſo in their own original language, and the whole becomes conſequently a very precious collection for the uſe of the learned; which in time muſt be the means of diffuſing knowledge and ſubſtituting it to prejudice and panick.

3. The notes affixed to the tranſlation are numerous, inſtructive, and well connected with the various points ſubjected to elucidation or controverſy. In reference to the Brownonian theory, which he alleges has been partially and with modification, adopted by Dr. Ruſh, he offers a ſeries of intereſting arguments againſt it. Of the doctrine of the latter on fevers, he ſubjoins an accurate expoſition, offers but few obſervations againſt it, which we do not judge adequate to the merit of the controverted ſubject, nor ſubverſive of the principles upon which it ſtands. Luzuriaga appears averſe to thoſe new modes of thinking, which militate with his favourite, and, I dare to ſay, habitual phyſiology in the manner of Boerhaave, Hoffman and Cullen. How could it be true, that nothing but error and pernicious applications reſult from modern theories?

And ſhould he not impeach his own underſtanding for concluding from the novelty of names, that as they obſcure and confuſe our ideas, they ſhould always be exploded from medical language? To the infatuated Brownonian, we would, like him, repeat the well applied advice of the Poët:

" Parce, puer, ſtimulis; et fortiùs utere loris."

But to the unqualified and excluſive admirer of ancient doctrines, who even rejects the uſeful help of ingenious exertions of the moderns, let us at leaſt recommend to attend to cauſes hitherto unknown:

" Ni refugis, tenueſque piget cognoſcere cauſas."

It is but juſt to cenſure the Spaniſh tranſlator for connecting ſo often, the names of the writers he conſults, with what he ſuppoſes to be their opinions, doctrines, and obſervations, in a ſtyle and propoſitions different from their own, to which he ſeldom takes the trouble to mark any literal reference. There never can be ſufficient reaſon to diſpenſe in controverſy with ſuch a rule, as propoſitions derive always their meaning from antecedents and connexion with their intended deduction. In the notes of Luzuriaga, we find frequently ourſelves in a very ſtrange and complicated dreſs; with difficulty we can make out at laſt our own features. At that rate, the honour of being noticed is very equivocal. How far the author has expoſed himſelf to conſiderable miſtatements, by his own mode of quotation, it would be difficult to aſcertain; but while we reject the deſign or ſuppoſition of unfair inquiries, we regret to be able to point out ſome material inaccuracies of the kind; moreover, ſo many quotations do not conſtitute preciſely a meritorious appearance of learning or erudition; they do not look better indeed than many files and ſtrings of notes, for various ſubjects, more ſymmetrically than judiciouſly arranged.

4. The tranſlation is very correct, and as far as we could judge conformable to the original text. Some pages however have been ſuppreſſed and *condenſed* in a ſhort diſcourſe, expreſſing cenſorious obſervations, on account of Dr. Ruſh declaring his wiſhes that the public could be always informed of the nature and method of cure of peſtilential diſeaſes: this is thought inconſiſtent with his having warned his readers in another place, and appriſed them that his ſucceſsful mode of treatment in 1794, could not be applied in any other recurrence of the epidemic. But if experienced practitioners are aware of whatever alterations of ſymptoms and change of remedy another peſtilential prevalence might conſtitute, what danger can ariſe from their timely and earneſtly recommending practical means, which are to be depended on, eſpecially during calamitous periods of deſertion and death, when the ſick are frequently left diſtreſſed and helpleſs?

Luzuriaga undertakes to ſubſtitute a diſcourſe on Prognoſtics, to the *account* of Dr. Ruſh; becauſe this part has been, he thinks, treated ſlightly and remains very deficient. Another file of medical documents of diverſe authorities, is preſſed on to ſtate all the varieties of prognoſtics on the yellow fever.

Here we muſt ſay that the Spaniſh writer indecorouſly ſuppoſes, that ſuch uſeleſs details have not been known, nor timely thought of; no doubt they were, and were properly alſo, judged uſeleſs. In fact, from the immenſe variety of accidents and ſymptoms known to him, what could he deviſe towards a uniform ſyſtem of noſological prognoſtics? If the taſk of obſervers and practitioners was juſt ſet on foot, to commence an inveſtigation of the characters and effects of this diſeaſe; a minute inquiry of all that could have been written, might perhaps better ſubſtantiate the form of its ſymptoms and prognoſtics. But to thoſe who write to prove, that notions heretofore ſup-

ported, are imperfect and erroneous, a new display of sayings and quotations on the same subject, is fastidious and useless.

In this article we notice with pleasure, that collecting the best meteorological tables and observations, which were obtained at the period of 1793, Luzuriaga takes the opportunity of evincing the fallacy of the inductions made by Mr. Matthew Carey, against the local and domestic origin of the Yellow Fever, on the ground that atmospheric influence of rains and cold rather increased the mortality, for he justly refers the invasion of all those fatal cases to previous more warm and insalubrious days, &c.

In the last part of this work, we are really gratified by a credible, and authoritative display of facts in favour of a good remedy and preventive in the Yellow Fever. "Spain itself can offer to enlightened Europe, the greater mass of those instances in which a timely use of oil, applied externally or internally, has produced a radical cure." To those respectable testimonies, if we add those that were of late years collected in the Levant, during the ravages of the plague; we are, no doubt, obliged to give it our examination or assent. Ancient documents are not wanted to exemplify the salutary effects of that remedy, in any indication congenial to pestilential disease. It is our opinion, that frictions of oil and *coatings of idio-electric substances* will ultimately prove necessarily useful in plague, Yellow Fever, &c.*

The two addresses of our worthy Professor, to his fellow citizens, published in the year 1799, are subjoined to this transl-

* An interesting paper on the same subject, has lately been published by Wm. Hunter, A. M. of the Asiatic Society of Calcutta, and Surgeon of the Marine Establishment at Bengal. Vide, Edinb. Med. Jour. No. 6.

lation. The firſt leads naturally the Spaniſh contagioniſt to take a particular notice of the different opinion it promulgates of the non-contagiouſneſs of the Yellow Fever; and again, a liſt of quotations is reſorted to, as numerous and weighty as the circumſtance of the caſe requires. But why are they reſorted to, when it is logically intended to refute them all? Is not that mode of reaſoning called *petitio principii!* What can thoſe authorities prove againſt a belief, rendered ſo recommendable by the rare inſtance of a ſelf-gained triumph, over a contrary doctrine, which the ſame man had formerly adopted, and which he now candidly oppoſes.

It is too often the caſe, that books are analyſed or reviewed, with the view of finding fault and cauſe for criticiſm, or encomium. This taſk being accompliſhed, the reader will like or diſlike the book forever, without knowing much about it. I hope that no ſuch irrevocable judgment ſhall reſult from this account of the above work, as neither is intended.

We wiſhed to give a correct idea of a foreign production, which contains much original matter of important national concern; but ſo interſperſed that it would hardly be made the ſubject of a tranſlation, and probably will never be circulated among us. On the other hand, it was neceſſary for the ſake of controverſy, to ſearch among the comments ſo officially and authoritatively circulated in Europe, whether we could find reaſon to ſuppoſe the doctrine invalidated, of the domeſtic origin of the Yellow Fever, which we have conſtantly advocated in America, and we confidently leave it to the impartial reader, to judge and appreciate.

Luzuriaga has, notwithſtanding, well merited of his country, for preſenting it with one of the moſt uſeful books. To him all writers who have added ſomething to the ſtock of general information, are indebted for being honourably and impartially

noticed. As a writer and a tranſlator, he excels by his learning, and by the laborious compilation he has accompliſhed; as an author, it is true, he is aſtoniſhingly paſſive, among ſo many evidences and arguments, which might ſo eaſily ſubvert all his doctrine; his candour, therefore, is the more genuine and recommendable, and we propoſe it as a model altogether, with the reſpectful, dignified and liberal deportment towards all his adverſaries. Inventive geniuſes obtain fame and celebrity; but profound and learned men, are likewiſe entitled to praiſe and admiration, while reſpect and gratitude, are abundantly treaſured up for them all.

An Account of the Effects of copious Blood-letting, in a Caſe of difficult Parturition. By Dr. James Spence, *of Dumfries, in Virginia, in a letter to* Dr. Benjamin Rush.

MRS. J—— B——, about 34 years of age, of a delicate habit, very irritable nerves, and ſubject occaſionally to attacks of hyſteria, was taken in labour with her firſt child, on Thurſday, 5th June, 1806. On Saturday evening, the 7th, I was deſired to viſit her. I found her very reſtleſs, her pulſe full and ſlow, tongue white, ſkin hot, very thirſty, but her bowels ſufficiently open. The midwife informed me that her pains had been pretty conſtant, but weak; that the waters had been diſcharged about twelve hours, that the head preſented, but made no progreſs on account of the rigidity of the parts.

About 10 o'clock, P. M. I drew twenty-four ounces of blood from her arm, by a large orifice, and although formerly diſpoſed to faint, when bled, there was not the ſmalleſt tendency to it, on the preſent occaſion, and I could not perſuade her to ſit or to ſtand up. After this bleeding, however, ſhe fell aſleep, and on waking, felt refreſhed, and leſs thirſty and feveriſh; but the labour pains were ſtill inconſiderable.

About twenty hours after bleeding her, having examined her vagina, I found the head preſenting cloſely ſurrounded by the os uteri, and neither of the ears could be felt. The external parts were much ſwoln and ſore to the touch.

As ſhe had now been in labour *four days*, had become extremely impatient and apprehenſive, and her relations much alarmed, I again reſolved to have recourſe to copious blood-letting, to induce ſyncope, and thereby relax the parts and accelerate delivery. I ſtated to her huſband the object I had in view; and accordingly at 10 P. M. I had her placed on the knee of an aſſiſtant, and opened a vein in the arm by a large orifice. While the blood was flowing freely, ſhe was raiſed on her feet, and ſupported by two women, and when about *thirty* ounces were drawn, ſhe began to complain of being fainty; ſaid ſhe was ready to ſink, looked very pale, and large drops of ſweat covered her face. Her arm was now tied up, and ſhe was laid on the bed; a few minutes thereafter, her labour pains came on with great force, and ſhe was ſafely delivered an hour after the bleeding.

Obſervations on Parts of Burns' *Hiſtory of the Gravid Uterus.*

By Wm. P. Dewees, M. D.

THERE are few things leſs perfectly underſtood than the anatomy of the human ovum before the third month of pregnancy. We muſt alſo include in this charge, the condition of the uterus itſelf, and of its appendages, until this period of geſtation: this has ariſen from two circumſtances chiefly; namely, 1ſt. the infrequent occurrence of ſubjects proper for the inveſtigation; and ſecondly, the minuteneſs of ſome of the parts, or their very gradual, or very ſudden change from their original, or unimpregnated ſtate. Hence has ariſen the variety of deſcriptions given us by different authors, who ſaw rather what they wiſhed to ſee, than what abſolutely exiſted. Imagination ought never to ſupply, what alone ſhould be demonſtrated; it ſhould never give its chimeras, for anatomical facts. In matters of mere opinion, ſpeculation is allowable; but if indulged in to ſupply anatomical deficiency, it ſhould be at leaſt premiſed that conjecture is taking the lead, for want of ſufficient obſervation to ſupply the place of phyſical truths.

I have been led to theſe reflections from a work on the gravid uterus* having juſt come into my hands, in which I conceive there is indulged no inconſiderable licenſe of the kind juſt mentioned. This I truly lament, as there is conſiderable induſtry, obſervation, and acumen diſplayed in many parts of it. The errors, as I conceive them to be, I have no doubt will be corrected by the ſubſequent obſervations and reflections of the author himſelf, as they muſt ſooner or later ſtrike him, as circumſtances not ſupported by anatomy, analogy, or reaſon.

* The Anatomy of the Gravid Uterus, &c. by John Burns.

The firſt circumſtance I ſhall notice will be his account of the manner in which the ovum deſcends into the uterus, and the condition of the parts through which it paſſes. He ſays, p. 150, that "Before the embryo paſſes down through the fallopian tube into the uterus, that organ is every where lined with a vaſcular ſubſtance, which is produced by the action of geſtation taking place in the uterus. This, which has received the name of the tunica decidua, conſiſts of two layers, the inner of which is entire, but the outer is perforated at the os uteri and entrance of the tubes. This outer layer enters, for about an inch, within the fallopian tubes, and deſcends down the ſides of the cervix uteri to its mouth terminating in that gluten which ſhuts it up.

"The ovum is likewiſe covered, (p. 151,) with a vaſcular coat, conſiſting of ſhaggy veſſels, ariſing from the chorion."

I would aſk, what proof is there that, the "outer layer of the decidua enters, for about an inch, within the fallopian tubes?" is there any? is this a fact warranted either by diſſection or analogy? I think it is not. My reaſons for thinking ſo are, firſt, that it never has been demonſtrated; and ſecondly, that it would be injurious. It would be injurious by ſtopping up the mouth of the fallopian tubes, and thus offer an obſtruction to the paſſage of the ovum; for we are not told that theſe orifices are increaſed in ſize during pregnancy, and if they be not increaſed in ſize at this time, it would be in vain, that the anatomiſt ſhould apply his knife to demonſtrate an efflorescence of veſſels for an inch within their cavities, ſince in their natural ſtate they ſcarcely allow a briſtle to paſs. With what chance of ſucceſs, then, can we hope that this will ever be proved by anatomy, more eſpecially as all reaſon is againſt it? It would be idle to urge that, at this period of pregnancy they acquire

more ſize, unleſs it can be demonſtrated; and the more ſo, as it would ſeem they dilated but to be obſtructed. But let us aſk for what purpoſe is the decidua within the tubes; can any uſe be found for it? The author himſelf urges none. May we not ſafely ſay, it would be injurious, and offer a great riſk to the ovum being detained, and developed there, ſince the ovum itſelf is covered with a vaſcular coat "which is to inoſculate with the decidua reflexa after it enters the uterus?" And if it be covered with "a coat conſiſting of ſhaggy veſſels" for the purpoſe juſt mentioned, why ſhould this union not take place with the veſſels of the decidua within the tubes, ſince it is admitted by all the experimental phyſiologiſts that the ovum or ova may remain ſome days in the tube. At leaſt this has obtained in the inferior animals, and if analogy be admiſſible in an inquiry of this kind, we could have no heſitation to conclude, it would remain equally long with the human female; and which no doubt would be time ſufficient to form a connection every way firm enough, to detain it within the tube; the author himſelf ſays, p. 151, "that when the ovum deſcends into the uterus, it does not fall freely into the cavity, but is every where ſurrounded with a vaſcular coat from the uterus. With this coat the veſſels of the chorion unite; and were we, therefore, at this period," (that is, of its deſcent into the uterus) "to examine the ovum, we ſhould find, that its ſhaggy veſſels united, at one part, with the decidua, at the fallopian tubes," (why therefore, not within them) "and, at every other part, with the inner layer, which is puſhed before it."

From this it would appear that, agreeably to the author, the union between the ovum and the uterus, or at leaſt the production of the uterus, takes place very rapidly; if this be admitted, it ſhould alſo be allowed, that a ſimilar union might take place within the tubes, unleſs ſome good reaſon can be given for the

ovum's not inoſculating with the decidua, as readily as with the decidua reflexa; but it does unite as readily with the one as with the other, according to his own doctrine, for he tells us, p. 153, that when the ovum falls into the uterus in a certain direction that it then unites with the inner layer of the decidua, which afterwards becomes decidua reflexa.

The next circumſtance I ſhall notice is the mode in which the ovum is nouriſhed, and deſcends into the uterus. "The embryo" ſays he, p. 152, "is at firſt a ſmall ſpeck, *growing* cloſe to the ſides of its membranes." We would aſk what is preciſely meant by the embryo growing to its membranes? Have they ever been ſeparate? If they have, by what kind of union are they joined? And where does this union take place? The embryo, p. 152, is ſaid moſt likely to derive its nouriſhment from "that portion of the ſhaggy chorion which covers the part of the membranes to which it is attached." It muſt be remembered that the ovum is now ſet free from the ovarium, and conſequently not attached any where until it deſcends into the uterus to form a union with the reflected decidua; but the embryo muſt have ſupport until this junction is formed; from whence does it derive it? From the ſpongy chorion; from whence does the ſpongy chorion derive it? This the author does not tell us. The chorion either has received a ſtock from the ovarium before its departure (which has never been proven), or the extremities of its veſſels muſt have the power of abſorption, a circumſtance wanting proof; and the more eſpecially as we are told this ſhaggy coat is to be the bond of union between it and the decidua reflexa. For we are immediately after told, "when it deſcends into the uterus, the decidua gives an additional covering, and joins its aid to the increaſed demands of the embryo; and the two vaſcular coats form the placenta." From our author's account therefore, I am much at

a loſs to account for the ſupport of the embryo while it is at the mercy of the fallopian tubes, and before it forms a connection with its mother. It is true Mr. Burns, p. 115, ſeems to think he does away every difficulty by ſaying, "it is probable, that, at firſt, the embryo grows by a kind of hydatid life;" but does this explain it? Is it not as difficult to form an idea of hydatid life as any other? If the ſyſtem by which this kind of life (if we may ſo term it) is maintained be leſs complex, is it leſs ſurpriſing, or of leſs difficult ſolution?

I ſhall now advert to another ſpeculation of our author; here, ſome indulgence may be given ſafely to fancy; but it ought to be admitted as a conjecture, and not advanced as a phyſiological truth. He ſays, p. 153, "as that part of the membranes to which the embryo is attached, generally enters the uterus laſt, it follows, if this account of the formation of the placenta be true, (that is, of its being the joint produce of the ſpongy chorion and decidua reflexa,) that the placenta will be formed originally over that part of the uterus, where the tube enters the decidua, at that ſpot joining with the chorion to form it. But in ſome inſtances the caſe is reverſed, and the embryo enters foremoſt, the reſt of the membranes following it. When this happens, then the inner layer of the decidua, which was ſtretched acroſs the orifice of the tubes, and which is afterwards to become the decidua reflexa, will contribute to the formation of the placenta."

The author has indulged here no common ſhare of conjecture, which by the peculiarity of language gives a very impoſing appearance, and which might be miſtaken for a well aſcertained fact. The manner in which the ovum enters the uterus muſt from the very nature of things ever remain in profound obſcurity. We need never hope for this point to be

cleared up, as the minuteneſs of the ovum itſelf; the impoſſibility of ever comparing the manner in which they fall into the uterus; but above all, the improbability that it ſhould be witneſſed in the act of falling, will ever place this matter among the many, which belong to conception, beyond the ken of man.

It is confeſſedly lawful on this part of the ſubject to indulge in hypotheſis; but it is miſleading too far, when a language is employed that would convey the idea of the fact being thoroughly aſcertained; who would but believe, that the mode in which the ovum enters the uterus, was well ſubſtantiated, when he reads, "as that part of the membranes of the ovum to which the embryo is attached, generally enters the uterus laſt;" p. 153, and again in the ſame paragraph; "but in ſome inſtances the caſe is reverſed, and the embryo enters firſt." Who, I ſay, from this language would ſuppoſe, but what the author had frequently witneſſed the fact, or has had ſome very cogent reaſons for believing, that it entered preciſely as he has preſcribed? The language of doubt is not employed; it is given as a fact of which there could be no diſpute. But we heſitate not to ſay, no one has ever had an opportunity to aſcertain this point; therefore all that is ſaid reſpecting the ſituation of the placenta, muſt be received as conjecture.

It has ever been a puzzle to determine why the placenta ſhould not always be attached nearly to the ſame place of the uterus. To do away this difficulty Mr. B. has aſſerted, that, the part of the membranes, to which the ovum is attached, generally enters the uterus laſt, having before premiſed that, the placenta is the joint production of the decidua and chorion, and that their union takes place oppoſite the part to which the fœtus is attached. It was therefore neceſſary to this theory,

to ſuppoſe, "the part of the membranes to which the embryo is attached," ſhould "generally enter laſt." And to account for the placenta being occaſionally placed over or near the mouth of the uterus, it was alſo neceſſary to admit that, "in ſome inſtances the caſe is reverſed."

I have already ſaid, there was no hope of this ever being demonſtrated; let us inquire now, how far it can be ſupported by facts and reaſon. From the premiſes laid down by Mr. B—— it muſt from his own confeſſion follow, "that the placenta (p. 153) will be formed originally over that part of the uterus, where the tube enters the decidua; at that ſpot joining with the chorion to form it." Now if this be admitted as a fact, we ſhould always find the placenta covering one of the tubes, or in other words that it would always be at or near the fundus of the uterus, except in thoſe caſes, where matters are reverſed, or where the embryo enters the uterus firſt. "When this happens," ſays our author, "then the inner layer of the decidua, which was ſtretched acroſs the orifice of the tube, and which is afterwards to become the decidua reflexa, will contribute to the formation of the placenta. In this caſe by the diſtention of the ovum, and the yielding of the decidua reflexa, the placenta will come at laſt to be inſerted over the mouth, or over ſome inferior part of the uterus."

Agreeably to this doctrine, the placenta muſt be found in one of three places, namely, over the openings of the fallopian tubes, or at the inferior part of the uterus. Does this accord with experience? the gentleman himſelf, I am ſure, upon reflection, will ſay no. There is certainly no part of the internal ſurface of the uterus to which the placenta may not be attached; and I believe it will accord with the obſervation of every accoucheur, when I ſay, I do not think any one part of the ſupe-

rior three-fourths of that viſcus, ſeems more eſpecially ſelected for its implantment. Boudeloque* in combating the opinions of Monſ. Levret on the cauſes of the obliquity of the uterus, furniſhes us with many examples of uncertainty, to what part of this organ the placenta adheres. And Monſ. Levret is of opinion, that the obliquity of the uterus happens when ever the placenta is not attached to the centre of the fundus; now if this be true, it will demonſtrate how rarely it is grafted there, ſince almoſt every woman is ſubject to this complaint. But we will not inſiſt on this negative proof of the variety of places to which this maſs may be attached, ſince the obſervation of every day affords abundant proof of it.

But let us examine for a moment the manner in which we ſuppoſe the ovum to paſs into the uterus. The ovum, we ſuppoſe, when detached from the ovarium, muſt be completely globular, and that its membranes poſſeſs a conſiderable degree of firmneſs, that it may not be burſt by the action of the fallopian tube; now if it be completely ſpherical it muſt revolve frequently in its courſe down the tube, as we preſume it is furthered along by that canal repeatedly contracting from behind; if this be true, to what part of the genital ſyſtem ſhall we attach the power, of meaſuring exactly the length of the tube? to determine the preciſe number of revolutions it is to make, that "the part of the membranes to which the embryo is attached may enter the uterus laſt"; to nicely adjuſt its ſituation before it enters the tube, that the caſe may not be reverſed, and the embryo be made to "enter firſt." I ſay to what part ſhall we give this power? without all theſe precautions we ſhall ſee at once that, the ovum muſt enter the uterus promiſcuouſly; this in fact we ſuppoſe, and hence we find its placenta may be

* Midwifery, Vol. I. Art. Obliquity of the Uterus.

attached indifferently to any part of the internal ſurface of this organ.

From a note in p. 153, we are led to ſuppoſe, that Mr. B. does not entertain the ſame opinion of the ſhape and firmneſs of the ovum as is contended for here, ſince he ſays, "The entrance of the ovum may be compared to the delivery of the child, at full time. In both the membranes protrude firſt; at leaſt they always protrude firſt in labour, owing to the bulk of the child; and moſt commonly they protrude firſt from the tube, although, from the ſmallneſs of the embryo this does not invariably happen." I ſhall not remark on the glaring inconſiſtency of the compariſon, but merely ſtate, what ſtrikes me as the opinion of Mr. B. of the form of the ovum. From what he advances in the note juſt quoted, we are led to ſuppoſe, he thinks the paſſage of the ovum a ſpecies of labour, and that the membranes of it are lax or not completely diſtended, ſince they are puſhed before the embryo, like the membranes at full time before the advancing child. Now, if this be admitted, what is to preſerve the tender embryo from the deſtructive embrace of the contracting fallopian tube?

I conceive that Mr. B.'s ideas on this ſubject cannot be admitted, as the moſt trifling compreſſion would be ſufficient to deſtroy the embryo; and agreeably to his own ſtatement the ovum muſt neceſſarily be ſubjected to conſiderable reſtraint, ſince the decidua lines the tubes for an inch, which muſt ſerve very much to diminiſh their capacity; and alſo, ſubjects the ovum to ſufficient preſſure to lengthen and puſh out the membranes before the embryo.

Beſides, we have the authority of moſt of the experimentaliſts on this ſubject, to ſay, that the ova are completely round,

if any dependence is to be put upon their figures of them; thoſe of De Graaf and Cruikſhank are decidedly ſo, and we truſt that reaſon confirms the opinion. It will now irreſiſtibly follow, that Mr. B.'s ſtatement of the manner in which the ovum enters the uterus is chimerical; and that the ovum muſt frequently apply different portions of its ſurface to that of the tube during its paſſage through it, conſequently, no certainty can obtain with reſpect to the part it may preſent to the opening at the uterus.

Philadelphia, 15th November, 1806.

Dear Sir,

The above paper was written nearly a twelvemonth ſince, but with a different view than for publication; but as I have for the preſent abandoned the object I then had in view, I ſubmit it now to your diſpoſal.

I am, Sir, yours with eſteem,

WILLIAM P. DEWEES.

Dr. John Redman Coxe.

Caſe of Hydrocele, ſucceſsfully treated without a ſurgical Operation. Read before the Philadelphia Medical Lyceum, November 5th, 1806, *by* William Shaw, M. D.

ON the 19th of January, 1804, I viſited Mr. A. S. who was afflicted with Hydrocele of the Tunica Vaginalis. The tumour was about four inches in diameter at the lower and moſt depending part, and extended upward, in the direction of the ſpermatic cord, to the abdominal ring. It was of a pyramidal figure, nearly ſix inches in length. The teſticle could not without great difficulty be diſcovered.

The tumor was tranſparent at the lower and anterior part. It gave him very little pain, unleſs when the bandage that ſuſpended it was removed, or when he ſtood near a fire, in which ſituation, he felt a ſenſation of ſcalding: the principal inconvenience was from its ſize. The diſeaſe had been gradually advancing for five months before I was conſulted. I immediately propoſed an operation for the removal of the water; but to this he objected, ſtating that his buſineſs, at that time, would not admit of his confinement. He wiſhed me to make trial of ſome other means. I then commenced the cure by friction to the part with ſtrong mercurial ointment, and by ſuſpending the ſcrotum in a leather bag, on the inner ſurface of which was ſpread a quantity of the ſame ointment. The parts were directed to be well waſhed with warm water and ſoap, once in three days. He was occaſionally bled, and draſtic purges were adminiſtered twice or thrice a week. He proceeded in this courſe for three weeks without any apparent benefit, though the mercury had cauſed conſiderable ſoreneſs of his gums, accompanied by a gentle ptyaliſm. During this period he loſt from the arm near fifty ounces of blood. Diſappointed in the reſult of thoſe meaſures, and my patient ſtill unwilling to undergo a ſurgical operation, I attempted the cure by a different treatment, as ſoon as the mercurial action had ſubſided. Two grains of tartariſed antimony, combined with an equal quantity of powdered digitalis, were given him morning and evening, which vomited pretty briſkly, and kept his bowels open. He alſo was deſired to bathe the parts frequently in the day with cold water. This plan was continued about two weeks, when the whole of the water ſeemed to be removed, and the ſcrotum and teſticle reduced, almoſt to their natural ſize. The medicine was now diſcontinued, and leeches were applied to remove a little inflammation, which ſtill exiſted in the teſticle and ſpermatic veſſels. The cold water was employed a few weeks longer, in order to ſtrengthen the parts, and prevent a return of the diſeaſe.

No ſymptom of the complaint has, however, yet recurred, and he now enjoys good health. It is proper to obſerve, that this man was not confined during the cure; but was able to attend to his buſineſs, which is a circumſtance in favour of this plan.

Some Account of the Appearances on Diſſection in certain Caſes of Yellow Fever, and Notice of ſome Symptoms of the Diſeaſe, as it appeared in the City Hoſpital in the Year 1805. *Read before the Philadelphia Medical Lyceum,* —— 1806, *by* JOSEPH PARRISH, M. D.

AS the ſubject of Yellow Fever has become very intereſting to the citizens of the United States, and as in ſeveral of our populous cities, many thouſands have fallen victims to its ravages, it becomes the duty of thoſe practitioners of medicine, who have had an opportunity of obſerving many caſes of this formidable diſeaſe, to render all the information in their power reſpecting it; and although the limits of the preſent eſſay will not admit of entering at large upon the ſubject, yet if it goes no further than to confirm ſome facts related by others, I ſhall have at leaſt, made an effort to contribute my part; and ſhall proceed to an account of certain appearances on diſſection, and to notice ſome ſymptoms of the diſeaſe, as it appeared at the City Hoſpital in the ſummer and autumn of laſt year.

In concert with my friend and colleague, (the late) Dr. John Church, and aſſiſted by Dr. S. Tucker, and our preſent ſecre-

tary, J. Perkin, who both reſided with me at the hoſpital, I examined a conſiderable number of the patients who died at that inſtitution.

The uniformity of diſeaſed appearances in the ſtomach was very remarkable, and it was obſerved that where the inflammation of this viſcus ſeemed to have been moſt violent, the quantity of matter denominated black vomit was the leaſt; and in ſome inſtances where the whole ſurface of the villous coat had been very highly inflamed, there was a total abſence of black matter.

The liver in ſome ſubjects was natural, in others it was tinged of a yellow colour; the gall-bladder contained bile which at firſt ſight appeared perfectly black, but on dipping linen or white paper into it, a dark green colour was immediately evident, except in two inſtances where it was of a dark orange colour and thick conſiſtence; it reſembled the ſyrup of rhubarb. The ſtomach in both inſtances contained the black vomit. When this fluid was ſubjected to the ſame teſt as the bile, it was generally found of a dark reddiſh or chocolate colour, but never had a greeniſh caſt.

Two ſubjects were examined who died comatoſe; the brain in both inſtances, and the membranes inveſting it, appeared natural: in one of theſe caſes, the ſtomach contained black matter, and an introſuſceptio of the ſmall inteſtines was diſcovered in two portions; in the other, the ſtomach did not contain any black matter, and had been but very ſlightly inflamed; the veſica urinaria had been in a ſtate of great inflammation, it had a number of blotches upon its inner coat of a deep ſcarlet colour. A part of the ſmall inteſtines was of a very dark colour approaching to gangrene, its inner coat was lined with a bloody mucus. A ſimilar appearance was obſerved in ſeveral other

ſubjects.* Two other caſes of introſuſceptio were alſo met with. Worms in the inteſtines were frequently obſerved during the courſe of the epidemic; I have known them to crawl from the patients during their illneſs.

Three caſes occurred wherein there was no ſecretion of urine, all of them ſweated moſt profuſely, and all died. One of them was examined after death; the bladder did not contain a tea-ſpoonful of urine. This patient was affected with a paralyſis of his lower extremities a few hours before his deceaſe; his mind appeared to be perfectly collected at the time, and he deſcribed his ſenſations with great clearneſs.

The preceding appearances induced me to concur with my colleague and others, who aſſert, that the contents of the gall-bladder and the black vomit are ſpecifically different; the latter fluid being blood diſcharged from the capillary veſſels of the villous coat of the ſtomach; in ſupport of this doctrine I will offer a few obſervations.

1ſt. When a part is inflamed, the blood-veſſels of that part will become enlarged as was proven by John Hunter, in his experiments on the ears of rabbits; again, during this ſtate of inflammation, the veſſels deſtined to carry ſerum, admit red blood; we have repeated proofs of this in ophthalmia.

2d. The ſtomach is generally affected very early and potently in the diſeaſe; as a proof of it, we need go no further, than to obſerve the extreme tenderneſs of this organ, evinced by ſlight preſſure on the epigaſtric region.

3d. In the laſt ſtage of the diſeaſe we frequently ſee dark diſſolved blood, oozing from bliſtered ſurfaces, from the gums and tongue.

* In one caſe the ſmall inteſtines contained a quantity of pus.

From theſe circumſtances I infer, that as the ſtomach is early affected by inflammation, its minute veſſels become enlarged and admit blood, and as we ſee this fluid in a diſſolved ſtate diſcharging from the parts already enumerated, it is eaſy to conceive, that the ſame thing ſhould occur from the veſſels of the ſtomach, eſpecially as in a large majority of inſtances, the diſeaſe has been forcibly determined to this particular part.

Several caſes occurred where the ſtomach appeared to have been highly inflamed, and there was a total abſence of black matter. Is it not reaſonable to conclude that in theſe patients the inflammation muſt have been leſs early in its commencement, or ſlower in its progreſs, or elſe the diſeaſe has been ſo unuſually violent, that death has terminated the conflict, while the capillary veſſels were in a ſtate of activity inſtead of diſorganization? In ſupport of theſe conjectures, it may be ſtated, that the moſt highly inflamed ſtomach I ever met with, was in a young man, who died within 48 hours from the period of his attack.

The diſcharge of black matter from the ſtomach, is often preceded by a ſymptom, which ſtrengthens the opinion which I am endeavouring to ſupport. Who has been converſant with the diſeaſe, that has not witneſſed the *pauſe*, the *awful pauſe* between the violent ſymptoms of the firſt ſtage, and that wherein the ejection of black matter gives an intimation that death is at hand. During this truce as it were from its horrors, the patient will lie quite compoſed, pulſe ſlow and ſinking, countenance marked with an indeſcribable aſpect, the patient and his friends flatter themſelves that the diſeaſe is ſubſiding, perhaps the only complaint is a ſenſe of weight or heavineſs about the ſtomach, but a few hours convinces them that the black vomit, that "harbinger of death is at hand." Now is it not probable that this ſtate is induced by the ceſſation of inflamma-

tory action in the blood-veſſels of the ſtomach, and that at the moment of apparent tranquillity theſe veſſels are gradually pouring their contents into that organ; when a ſufficient quantity is accumulated, its action is excited, and the matter conſtituting black vomit is diſcharged.

May not the colour depend on two circumſtances; in the firſt place, the blood diſcharged during hemorrhages, in the laſt ſtage, is always dark, and when thrown into the ſtomach, it is not in a ſituation where it would receive any conſiderable portion of oxygen, and even if this were the caſe, I would aſk whether its being in a diſſolved ſtate would not leſſen, if not entirely deſtroy its affinity for that gas.

That blood effuſed into a cavity will aſſume an appearance which bears a ſtrong reſemblance to the fluid in queſtion, is inferred from the following fact which came within my own obſervation.

During a term of attendance on the Philadelphia Diſpenſary laſt ſpring, a female patient in Gaſkill-ſtreet, came under my care, with pneumonia. As the ſymptoms were urgent, the lancet was employed with freedom; blitters were applied over the part in pain, and the uſual antiphlogiſtic mode of treatment was adopted; but on the evening of the fifth day, her pulſe flagged, reſpiration became laborious, about one pound of blood was thrown up through the trachea during the night, and finally ſhe died. On opening the thorax 18 hours after death, in the preſence of Henry Wiſmer, at that time apothecary to the inſtitution, the right ſide was found to contain a large quantity of black-coloured offenſive fluid, I think at leaſt two quarts; ſeveral clots of coagulated blood were adhering to the ſide of the thorax, and it appeared as if the fluid was derived from the rupture of a pulmonary veſſel, which diſcharged a portion of its blood through the trachea, while a much larger

quantity was effuſed between the lung and the parietes of the thorax. I preſerved about ſix ounces of it, and now preſent it for the inſpection of my medical brethren, who have often ſeen the black vomit.

Previouſly to cloſing the ſubject, permit me to obſerve, that as I have ſeen ſome remarkable caſes of recovery after the brain has been apparently much affected by the diſeaſe, but none after black vomit, (except one inſtance of a female child) ſo in an urgent caſe where danger appeared to be very great, my hopes of the patient's recovery would be ſtronger if the force of the diſeaſe was exerted even on the tender brain itſelf, inſtead of the ſtomach.

A deficient ſecretion of urine, accompanied with profuſe ſpontaneous ſweats, affords a prognoſis of the moſt unfavourable kind, although a tranſient obſerver might readily conclude that the ſweating would effect a ſolution of the diſeaſe; that this ſymptom is the conſequence of paralyſis in the ſecretory veſſels of the kidney, ſeems to be confirmed by the fact, that in one of the caſes, the lower extremities were ſimilarly affected.

The natural appearance of the brain, where coma had been the prevailing ſymptom, affords room for ſome ſpeculation. How far it may be affected by ſympathy with the ſtomach I ſhall not pretend to determine; in both caſes the ſtomach was diſeaſed, although it muſt be admitted, that in one of the ſubjects the inflammation of this viſcus appeared to have been unuſually ſlight.

MEDICAL MUSEUM.

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Harriſon, on the Spontaneous Cure of Hydrocele.

Harriſonburg, Rockingham, (Vir.) October 23d, 1806.

SIR,

IF the following fact ſhall appear to you of ſufficient importance, to occupy a place in your uſeful publication, it is cheerfully ſubmitted to your ſervice,

By your obedient and
Humble ſervant,
PEACHEY HARRISON.

DR. JOHN REDMAN COXE.

BENJAMIN SMITH, of a corpulent habit, and beyond the meridian of life, has been now about four years well of that ſpecies of hernia, which has been denominated hydrocele; the hiſtory of which is ſhortly this. About eleven years before the diſappearance of the diſorder, he had been engaged in building a ſtone houſe, and as he poſſeſſed an active and thorough-going diſpoſition, he daily aſſiſted in the moſt laborious parts of

the work, and eſpecially in ſupplying the ſcaffolds with ſtone; and thoſe he generally carried with his hands, ſupported by his thighs and pubes: he received no particular hurt that he can recollect, during the time he was engaged in theſe labours; but the diſorder commencing in the fall of the ſame ſeaſon, he has ever been diſpoſed to believe, that they were the cauſes to which it ought to be referred.

The accumulation of water was ſo rapid, that the tunica vaginalis teſtis, was completely filled, and even diſtended to an enormous ſize in the courſe of a few months. Early application was made to Dr. H. of Staunton, Virginia, but Mr. Smith is of opinion that he did not detect the real nature of the complaint; and indeed this opinion is clearly evinced by the abſurd preſcription of a truſs, which muſt have had a tendency directly inimical to a cure. I am not diſpoſed to diſturb the aſhes of Dr. H. which are now repoſing in the peaceful grave, but I cannot forbear obſerving, that in this caſe, there are ſtrong marks of culpable negligence, or of a want of penetration, and that it is not ſufficient for a man to have been born in a Scotch atmoſphere, or to have been bred up in a Scotch ſchool, in order to entitle him to the claim of ſuperiority in the ſcience of medicine. It is eaſy to conjecture the ſucceſs attendant upon the preſcriptions of Dr. H.—and other phyſicians in this country were conſulted with like ſatisfaction on the part of the patient, and with like ſucceſs in their preſcriptions.

After the tumour had attained nearly, or perhaps quite the ſize of a pint jug, which it did in the courſe of the firſt year, it became ſtationary, and continued ſo without any perceptible alteration, as to the ſize, for the ſpace of ten years. From its bulk, it was a great inconvenience, and a conſiderable deformity, beſides the continual ſolicitude of mind it occaſioned, and which aroſe chiefly from his ignorance of its real nature, or

rather from a belief confirmed by MEDICAL ADVICE, that the tumour was formed by a deſcent of the abdominal viſcera, and that it might ſooner or later prove the cauſe of ſudden death: his fears, however, from this quarter, were removed in 1798, when from a hiſtory of the caſe which he gave, I aſſured him it was a collection of water, and that in all probability, it would grow no worſe than it then was. His ſolicitude being almoſt entirely removed, the conſequence was, that no means were employed with a view to a cure; the truſs was laid aſide as a nuiſance. This was the ſtate of things early in the year 1802, when driving a coachee acroſs Jenyn's Gap in the North mountain, it was overſet, and he was caſt in ſuch a way as to fall with one of his knees upon a wheel, by which the rotula was diſruptured from the tibia, and the knee joint badly diſlocated; this occaſioned twelve weeks confinement to his bed, during which time he lay continually upon his back, with his leg extended.

During his confinement with his knee, his ſufferings from this quarter, were ſo ſevere, that he entirely forgot his old complaint, and did not diſcover until he was able to riſe from his bed and walk through the houſe, that the tumour had entirely diſappeared. It is now about four years ſince this happy event took place; and until this time he continues perfectly free from every ſymptom of hydrocele.

Mr. Smith declares that, ſo great was the inconvenience of the tumour, he by no means regrets to have ſuffered what he did, and his ſufferings it is eaſy to conceive, were very conſiderable, ſince they terminated in the removal of a very inveterate and diſtreſſing malady.

Query. Were confinement to a horizontal poſture and ſpare diet, the only means by which the cure was promoted? or did the affection of the knee contribute any thing towards the cure?

It cannot be doubted, but the cure was the conſequence of the confinement and the circumſtances attending it. Would confinement to a horizontal poſture, and chiefly to the back, for a conſiderable time, with occaſional bliſtering to the parts and a ſpare diet effect a cure in hydrocele?

An Account of the Efficacy of a Salivation in the Cure of the Pulmonary Conſumption; in a Letter from DR. SAMUEL AKERLY, *to* DR. BENJAMIN RUSH.

New York Hoſpital, November 25th, 1806.

SIR,

SINCE my reſidence in this houſe, I have followed your plan in the treatment of phthiſical patients, and have been more ſucceſsful than with any other. The object of this letter is to ſtrengthen your opinion, and increaſe the information on this ſubject; the way to the apt illuſtration of which you have pointed out.

My own trial with mercury in phthiſis pulmonalis has not alone been ſucceſsful; but accidently meeting Dr. C. Ball, of Brooklin, Long Iſland, his practice corroborated mine. I am ſanguine in the belief that mercury will cure a pulmonary conſumption, when it has not advanced to its laſt ſtage. In thoſe prediſpoſed to the diſeaſe by hereditary taint or otherwiſe, it may be ſucceſsfully given, and to effect this, gently to touch the gums is ſufficient, when the cough and expectoration will ceaſe. Mercury, as far as my trial goes, has no effect upon the hoarſeneſs which ſometimes accompanies this diſeaſe. I have generally uſed the mild muriate of mercury in my preſcriptions, in the form of pill, accompanying it with an expectorant. The ſucceſsful caſes which I have noted, are incloſed, and at your

diſpoſal. I have loſt ſeveral patients after they began to take calomel, but they were far gone with the diſeaſe, and deſpaired of, when admitted.

I am your's, reſpectfully,

SAMUEL AKERLY.

Dr. Benjamin Rush.

JOSEPH PURSELL, ſeaman, aged 20 years, was admitted into the hoſpital on the 8th July, 1806, for phthiſis. He had been ſick for ſome months, in which time he was very much reduced, and had become greatly debilitated. His cough was great, attended with a bloody expectoration, hoarſeneſs and pain of the breaſt. His eyes were of a gloſſy white, and his tongue furred.

In this ſtate I preſcribed calomel and a pectoral mixture, according to the following formula.

℞ Rad. ſerpent.
Sem. aniſi, ana ʒiij.
Rad. glycyrr. ʒij.

This was boiled in ℥viij. of water, till reduced to ℥vj. When cooled and ſtrained, a large ſpoonful was given every hour; this was continued with the calomel, until his mouth and gums were ſore, and the evacuation by ſaliva was conſiderable. By this time his expectoration decreaſed and was without blood.

The above medicines were then ſtopped, and a ſolution of borate of ſoda was given to waſh and cool the mouth. Tar pills made up with magneſia were alſo adminiſtered, when the

calomel was ſtopped. With this treatment, and a milk diet, he continued to improve till the ſalivation ceaſed. Tar pills were taken till he was diſmiſſed, which was on the 25th of the ſame month, having been confined for 18 days. He was requeſted to ſtay a week longer, but feeling quite ſtrong, and eager to be diſcharged, he went away cured. I ſaw him a few weeks after, and he appeared to be getting ſtrength and fleſh.

J—— A—— S——, once of reputable connections, in conſequence of the death of her parents, had thrown herſelf upon the town, and had lived ſeveral years as a proſtitute, in which ſituation ſhe fell into a conſumption, in the nineteenth year of her age.

She was admitted on the 11th of April, 1806, with a hoarſeneſs and ſevere cough, attended with a painful and difficult expectoration. Her eyes were glaſſy, and ſhe had regular acceſſions of hectic fever in the afternoon. In this ſtate ſhe had lingered the preceding ſix months, in a houſe of ill fame, from whence ſhe came to the hoſpital.

After admiſſion, ſhe had conſiderable fever and pain, for which ſhe was bled and bliſtered. The pectoral mixture mentioned in the preceding caſe was ordered and taken for ſome time without much relief. Three drachms of the paregoric elixir were generally added to ℥ viij of the mixture after it was prepared. It was alternated with the thebaic tincture, but neither would allay the cough. Finding the above medicine had little or no effect, it was changed for the ſpiritus Mindereri, which relieved the patient for a time, but her cough returned as ſevere as ever, when ſhe began to deſpair and weep about her illneſs, leſt ſhe ſhould never recover; I gave her encouragement, however, and promiſed her pills, which if ſhe

would take, I had no doubt would cure her. She was ſomewhat backward, however, fearing they would be mercury, the effects of which ſhe dreaded, as ſome in the ſame ward were under a ſalivation. Calomel pills were, notwithſtanding, given her. The quantity was ſmall, and ſhe continued to take three a-day for upwards of a week, and ſtill continued in the uſe of the ſpiritus Mindereri. Her cough ſoon abated, and had nearly ceaſed, when her gums began to grow ſore, by which time the calomel was omitted without producing complete ptyaliſm. Her legs were likewiſe œdematous to which I applied bandages, and kept bliſters diſcharging with epiſpaſtic ointment, by which means they were ſoon cured.

She continued to take the ſpiritus Mindereri, a large ſpoonful every hour during the day, till diſcharged on the 7th June, when ſhe went away well and in good ſpirits, having been in the hoſpital eight weeks and a day.

JAMES M'COLGAN, ſeaman, aged 36 years, was admitted into the hoſpital on the 30th May, 1806, with an inflammation of the lungs. He had an exceſſive dry cough, with pain of the breaſt and ſide, a full pulſe and hot ſkin. He was repeatedly bled, and bliſters were applied to the breaſt. Expectorants were given him, and he appeared to be getting well, ſo that he walked about, and had fixed upon a day when he thought he would be able to leave the hoſpital. In the mean time he was taken with a violent fit of coughing, which had nearly killed him, and in which he diſcharged more than a quart of pure pus. After this diſcharge, he obtained ſome eaſe, and a reſpite from his cough. A large quantity of the expectorant mixture and anodynes were given to allay the irritation. When the diſcharge ceaſed, a dry cough continued, upon which, after many days trial, pectoral medicines had no

effect. The patient began to grow weak, and was evidently approaching to a conſumption. He now deſpaired of getting well. In this condition I preſcribed calomel in pills, in order to bring on a ſlow ſalivation. In a few days his cough was allayed, and the patient took courage, and again thought of being diſcharged; but before the mercury affected his mouth, his hopes were deſtroyed, and for my own part, I thought he would have died.

Early one morning I was awaked by the nurſe, that I might ſee M'Colgan. I found him in a diſtreſſed ſituation, with a continual violent cough, pouring matter from his mouth. This continued for more than two hours, and was not allayed by powerful anodynes; the matter diſcharged was about two quarts.

Again finding ſome eaſe, the calomel pills were continued, and the expectorant mixture, with an increaſed quantity of laudanum. A ſlight diſcharge of pus by expectoration continued, which gradually decreaſed with the cough as the ſalivation came on, at which time it ceaſed. His medicines were omitted, and a ſolution of borax, (borate of ſoda,) was given to cool and cleanſe his mouth. This ſoon got well, and he went away cured on the 7th July, 1806.

FREDERICK MOLINE, ſeaman, by birth a Swede, aged 39 years, was admitted into the hoſpital on the 10th October, 1806, with phthiſis. He complained of pain in the breaſt, frequent cough, and a bad taſted expectoration. His eyes were glaſſy, his tongue foul, and his pulſe weak. His countenance wore the aſpect of deſpondency. Having been ſick three months, and unable to work, with a family to ſupport, his complaint increaſing upon him, he deſpaired of getting well. Thus

circumſtanced, he was received in the hoſpital. From my firm belief in the good effects of mercury, I immediately preſcribed it with the mixture before mentioned. When his gums were affected, the cough and expectoration abated; the calomel was omitted having produced only a ſlight ptyaliſm, but the expectorant was continued. The pain in the breaſt was removed by a bliſter, but it returned in the form of rheumatiſm about the ſhoulders; another bliſter relieved, but did not remove it. Tincture of capſicum was then applied externally with ſome advantage. The patient left the hoſpital on the 5th of November following, cured of his pulmonary complaint, though ſtill feeling a ſlight pain about the ſhoulders, but his countenance was enlivened, his pulſe raiſed, and his health apparently eſtabliſhed.

Obſervations on Dr. Burton's *Account of a ſuppoſed Caſe of Hydrophobia, by* James Mease, M. D.

Philadelphia, December 1ſt, 1806.

Dear Sir,

In the ſecond Hexade of the Medical Repoſitory of New-York, p. 15, Dr. Burton of Virginia, has publiſhed "an account of a caſe of hydrophobia ſucceſsfully treated by copious bleeding and mercury, in two letters to Dr. Ruſh," upon which I ſhall make ſome remarks; and that no ſuſpicion may be entertained reſpecting inaccurate quotations, I requeſt you to publiſh the whole letter.

JAMES MEASE.

Dr. John Redman Coxe.

"*Bent-Creek (Virginia) Auguſt* 21, 1803.

"SIR,

"BELIEVING that you are always diſpoſed to encourage any thing which may throw light upon the treatment of diſeaſes, I take the liberty of addreſſing to you the following caſe of hydrophobia, requeſting a line or two, if you think it deſerving your attention.

"On the 4th of July, 1803, at nine o'clock in the evening, I was deſired to viſit Thomas Brothers, aged twenty-eight years. I was informed by the perſon who came for me, that he had been bitten by a dog, which his friends ſuſpected to be mad. I found him in the hands of four young men, who were endeavouring to confine him, and thereby prevent him from injuring himſelf or friends. He recognized me, and requeſted me to give him my hand, which he made a violent effort to draw within his mouth. Conſcious of his inclination to bite, he adviſed his friends to keep at a diſtance, mentioning that a mad dog had bitten him.

"His ſymptoms were as follow, viz. a dull pain in his head, watery eyes, dull aſpect, ſtricture and heavineſs at the breaſt, and a high fever.

"Believing, as you do, that there is but one fever, I determined to treat this caſe as an inflammatory fever. I therefore drew ℥xx. blood; and, as he refuſed to take any thing aqueous, I had him drenched with a large doſe of calomel and jalap.

"July 5th, four A. M. Finding the ſymptoms worſe, I took away ℥ xvj. blood, and applied two large epiſpaſtic plaſters to his legs, hoping thereby to relieve the oppreſſion of the præcordia and other ſymptoms.

"Twelve M. Was informed that one of his friends had permitted him to take a ſtick in his mouth; which he bit ſo as to looſen ſeveral of his teeth. As he craved ſomething to bite, I deſired his friend to give him a piece of lead, which he bit until he almoſt exhauſted his ſtrength.

"One P. M. Finding but little alteration, I drew ℥ xviij. blood, and had him drenched with the antimonial powders.

"Two P. M. He ſlept until half after three, when he awoke, with the diſpoſition to bite, oppreſſion, &c. but not ſo violent.

"July 6th, eight A. M. Found him biting the bed-clothes; his countenance maniacal, his pulſe ſynocha, with a ſtricture of the breaſt, difficult deglutition, laborious breathing, and a diſcharge of ſaliva. I took away ℥ xxiv. blood, gave him a doſe of calomel and jalap, and continued the powders.

"Twelve M. Drew ℥ xvi. blood, and gave him laudanum.

"Five P. M. Found him in a ſlumber; his ſkin moiſt, and his fever and other ſymptoms much abated.

"July 7th, eight A. M. Was informed that he had only two paroxyſms during my abſence, and that he had loſt ℥ xvi. blood, agreeably to directions. Notwithſtanding the favourable aſpect which the diſeaſe wore, I reſolved to bleed him twice more, and then to induce an artificial fever by mercury, which would predominate over the hydrophobic. I therefore drew ℥ x. blood, and requeſted his friend to take ℥ xviij. at night; to rub in a ſmall quantity of mercurial ointment; and to give a mercurial pill every four hours.

"July 8th, nine A. M. Found him convaleſcent, but continued the mercurial unction and pills.

"July 9th, ten A. M. Found his gums ſore, and diſcontinued the mercury.

"July 15th, one P. M. Found him well, but with a conſiderable degree of debility.

"It would be doing injuſtice to you not to mention that I was indebted to your lectures for the ſucceſsful treatment of this diſeaſe."

"*Philadelphia, Auguſt* 29, 1803.

"DEAR SIR,

"ACCEPT of my congratulations upon your rare triumph over a caſe of hydrophobia. I give you great credit for the boldneſs of your practice. You have deſerved well of the profeſſion of medicine.

"In order to render your communication more ſatisfactory, permit me to requeſt your anſwer to the following queſtions.

"1. On what part of the body of your patient was the wound inflicted? and how long was the interval between the time of his being bitten and the attack of his fever?

"2. Did he diſcover any averſion from the ſight of water; and did he refuſe to ſwallow liquids of all kinds?

"3. What were the appearances of the blood drawn? Did it differ in the different ſtages of the diſeaſe?

"Your anſwer to the above queſtions will much oblige your ſincere friend,

BENJAMIN RUSH.

DR. BURTON."

"*Bent-Creek (Virginia), Sept.* 18, 1803.

"SIR,

"I regret that buſineſs of an indiſpenſable nature prevented me from being more particular in my communication. I drew it up in a hurry, intending to tranſcribe it, and inſert ſuch other notes as would throw light on the caſe; but being called out a few hours before the poſt ſet out from this place, I was obliged to forward the communication in the manner in which you received it.

"The part of the body of my patient on which the wound was inflicted was a little above the union of the ſolæus and gaſtrocnemius muſcles, which form the tendo-achillis. The interval between the time of his being bitten and the attack of the fever was twenty-four days.

"He was, I was told, dull and ſolitary a few days previous to the attack. A few minutes before it his friends found him two hundred yards from the houſe, apparently in a deep ſtudy. He has informed me, ſince his recovery, that he had a ſlight pain in the wound, attended with itching, and an uneaſineſs in the inguinal gland, ſeveral days before the fever.

"He refuſed to ſwallow liquids; and the ſight of water threw him into a convulſive agitation.

"With regard to the appearances of the blood drawn, I am ſorry to inform you that after it became cold I did not examine it."

I am, Sir, yours,

ROBERT BURTON.

DR. BENJAMIN RUSH."

I will venture to aſſert that the diſeaſe cured by Dr. Burton had not the ſmalleſt connexion with the infection of the ſuppoſed mad dog: my reaſons are

1. The uncertainty we are left in reſpecting the actual madneſs of the animal. Dr. Burton merely ſays, "he was informed that his friend ſuſpected the dog to be mad:" he therefore inſtituted the proceſs of cure, grounded upon the theory of the diſeaſe, which he had received at the Univerſity, viz. that "it is a highly inflammatory fever, and requires copious blood-letting": and it muſt be allowed that the practice was ſtrictly conformable to the theory; but why were not inquiries made into the circumſtances upon which the "ſuſpicion" of the dog's madneſs was grounded; why were not inquiries inſtituted reſpecting the habits of the man, the circumſtances of his ſituation, employment, and expoſure to remote cauſes of fever before his attack? Surely in an awful complaint, about which ſo much has been written, and on the pathology of which ſo great uncertainty prevails, it was all-important to aſcertain the point; and it is ſingular that the reſpectable profeſſor, to whom the account was addreſſed, did not think it neceſſary to add the queſtion among thoſe communicated to Dr. Burton on the ſubject, in the anſwer to his pupil's letter. But as we are left in the dark reſpecting the actual madneſs of the dog, I muſt be allowed to doubt the fact. The man no doubt was bitten; but the ſymptoms under which he laboured, were either produced by the common cauſes of fever, (of which they bear ſtrong marks) increaſed by the terror of the conſequences of his bite, and by the ſuggeſtions and abſurd conduct of thoſe around him; or elſe, they were occaſioned by the latter cauſes alone. The influence of mental perturbations on the human ſyſtem is well known, in exciting a variety of alarming ſymptoms, and in no inſtance is their effect more ſtriking than when they ariſe from the apprehenſions of this truly awful diſeaſe; and we well know our books of medicine abound with the moſt ludicrous conſequences

of them : one perſon who was bitten by a dog "*ſuſpected*" to be mad, as in the caſe of the dog, by which Dr. Burton's patient was bitten, imagined himſelf transformed into the canine ſpecies, or to have imbibed a portion of the canine nature, and of courſe inſiſted that he could reſt in no poſition but upon his hands and knees : another alſo bitten by a dog equally "*ſuſpected*," terrified his friends by barking moſt ferociouſly ; a third bitten by a "*ſuſpected*" cat, amuſed the houſe by *mewing* ſeveral days ; nay ſo fully convinced have ſome been of the inevitable change of the human body into the nature of the animal from which the bite was received, that, when bitten by a horſe they have actually *neighed* ; and others (*riſum teneatis*) who were *pecked* by a "ſuſpected" cock, have deemed it neceſſary to crow. In like manner, Dr. Burton's patient, having been bitten by a dog, and he with his friends, having made up their minds that the animal was actually mad, and being poſſeſſed alſo of the abſurd but common belief, that a deſire to bite is a characteriſtic of the diſeaſe, had his imagination worked up into a full conviction that he muſt do as others had done ; and hence followed his attempt to ſnatch and bite when Dr. Burton approached him. I have, however, no doubt, that if all reſtraint had been taken from him, and he had been aſſured of the preſent health of the dog, that the biting diſpoſition would have ceaſed, and unleſs the cauſes of fever had really acted upon him, the Doctor might have ſheathed his lancet ; the mind of the afflicted man relieved from fears of impending danger would have been tranquillized, and the horror of water have vaniſhed as ſoon as the cauſe producing the ſymptoms had ceaſed to operate.

That fear is ſufficiently powerful to produce the ſymptoms uſually occurring in the diſeaſe originating from the bite of a mad animal, particularly that prominent and diſtreſſing one, the dread of water, I have long ſince proved.

In my inaugural diſſertation, p. 93, I have related the caſe of a gentleman, now holding a diſtinguiſhed place in the magiſtracy of Philadelphia; who was actually frightened into a hydrophobia by his phyſician, and I have referred to two others related by Dr. Percival,* of unfounded fears of infection having occaſioned a ſimilar ſymptom. Others have had ſo permanent a horror of water, merely from having been once bitten; as never after to be able to view it without uneaſineſs, nor to touch it without painful ſenſations. Med. Comment. Edinb. Vol. 6. Nay, even in perſons, whoſe firmneſs of mind, and knowledge of the animal œconomy might be ſuppoſed to ſecure them againſt ſuch ill founded alarms; we find, that the conſequences of mental perturbations ariſing from a ſuppoſed infection, have ſometimes been very alarming. Of this, the caſe of the late celebrated John Hunter was a ſtriking proof. His biographer informs us, that when diſſecting a perſon who died of the diſeaſe ariſing from the bite of a mad dog, Mr. Hunter cut his finger, and the fear of mere poſſible infection in conſequence of it, wrought ſo forcibly upon his mind, that it brought on a violent fit of thoſe ſymptoms (ariſing from an organic affection of the heart,) which ſome years afterward, proved fatal to him.

Many more ſimilar caſes to the above, might be mentioned; can we therefore think it ſtrange, that a man like the patient of

* As Dr. Percival's works are ſcarce, it is proper to give the particulars of the caſes above alluded to.

"Some time ago, I attended a clergyman, who laboured under many of the ſymptoms of hydrophobia, through the ſhock occaſioned by an official viſit to one of his pariſhioners, dying of that diſeaſe. He had no opinion of the Ormſkirk powder (a quack remedy) but the Tonquin remedy, (muſk, cinnabar, &c.) perfectly cured him. I was not long ſince conſulted about a man, bitten by a *ſuppoſed* mad dog. He had the uſual affections of the diſeaſe though in a ſlight degree, which were removed by mercurials and antiſpaſmodics. When the man was recovered, and qualified to ſtate minutely, and without anxiety, the circumſtances antecedent to his attack, I was perfectly convinced that his malady had originated ſolely from the terrors of imagination."

Dr. Burton, ignorant of the many chances againſt his ſuppoſed infection,* and of the nature of the diſeaſe to which he deemed himſelf liable, and whoſe natural fears had been increaſed by the injudicious conduct of thoſe around him, ſhould be driven to a ſtate of frenzy?

2. The abſence of ſome ſymptoms, and the preſence of others in the caſe related by Dr. Burton, is an additional argument in favour of the opinion, that it had no connexion with the canine infection. The only ſymptoms noticed, are a dull pain in the head, watery eyes, dull aſpect, ſtricture and heavineſs at the breaſt, and a high fever; now theſe are by no means the moſt ſtrongly marked ſymptoms in the true diſeaſe, in which the wild look, an anxiety of countenance which it is difficult to deſcribe, a catching of the breath, and ſenſe of ſuffocation upon being expoſed to a current of air, and a rapidity of action, ſo uniformly occur as to ſtrike every reporter; and ſo powerful is the impreſſion left upon my mind by them, from a caſe which I ſaw in Philadelphia† in the year 1801, that upon ſeeing ſimilar ſymptoms in future, I ſhould require no information reſpecting their origin: their omiſſion in the liſt of ſymptoms detailed by Dr. Burton, is full proof, that they did not occur, for had they appeared, he could not have failed to notice them as among the moſt prominent. The dread of water about which ſuch particular inquiry is made in the anſwer to Dr. Burton's letter, is far from being a proof that the diſeaſe proceeded from the cauſe ſuſpected, for in ſome of the beſt atteſted caſes on record,

* It is a ſingular fact, that in every caſe hitherto recorded of the *actual diſeaſe*, death has taken place, and yet that not in one of twenty who are bitten by dogs really mad, does the poiſon take effect. See *Obſervations on the arguments of Prof. Ruſh, in favour of the inflammatory nature of the diſeaſe produced by the bite of* a *mad dog*, p. 43. Philad. 1801. Hence, though it is abſurd to neglect preventive means in caſe of a bite, a ſource of great comfort ariſes to the ſufferer.

† The caſe of Yorke related by Dr. Phyſick, Med. Repoſitory, Vol. V. p. 1.

no difficulty is experienced in drinking,* and when it does occur, it is to be conſidered as merely a ſymptom of a ſymptom, viz. the affection of the throat; an accidental occurrence on which no indication of cure can be grounded; and laſtly, the diſpoſition to bite is alone ſufficient to convince me that the caſe had no connexion with the canine virus, for no ſuch diſpoſition ever occurs in the true diſeaſe; whereas, it always appears in thoſe which have been falſely aſcribed to the operation of the poiſon: nay, ſo far is a ferocity of temper from being attendant on the complaint, that timidity is one of its predominant characteriſtics, and ſome reporters have deſcribed the prevalence of the ſufferer's fears of injury from the bye-ſtanders as peculiarly diſtreſſing; the moſt athletic men have been overawed by thoſe who were greatly their inferiors in ſtrength, and though they do occaſionally exhibit ſudden burſts of paſſion or involuntary roughneſs of behaviour, yet in a moment afterwards they relent, and aſk for pardon in the moſt piteous tones.

3. If I required any other objection than thoſe I have already advanced, to convince me, that the caſe recorded by Dr. Burton, was not in the leaſt connected with the canine poiſon, the remedy by which the cure was effected would furniſh one. Phyſicians deceived by the violent temporary exertions of the ſick, ariſing from a ſudden excitement and conſequent increaſe of muſcular power, have from the earlieſt ages held, that the diſeaſe was highly inflammatory; and ſince the introduction of the lancet, it has been freely employed for its cure. When the learned Boerhaave aſcended the medical chair at Leyden, he ſupported the theory of the inflammatory nature of the diſeaſe with all his weight and extenſive authority, an authority which was probably more widely diffuſed, and more implicitly obeyed,

* I have related ſome ſuch in my inaugural diſſertation, and the public papers laſt year gave another account of a man who died of the diſeaſe under conſideration, and who drank freely during the whole courſe of it.

for near a century, than that of any medical man preceding him: his inſtructions with regard to the treatment of the diſeaſe even ſurpaſſed the practice of the bloody Botallus, and the fidelity with which they were executed, could not be exceeded; but alas, the conſequences were not ſuch as the ſanguine theoriſt expected; DEATH—wide ſpreading DEATH followed the ſteps of the Leyden diſciples in every part of the globe! one of theſe, profeſſor Rutherford, with a candour highly honourable, openly denounced his error in the clinical ward of the Edinburgh hoſpital, and this fact alone, ought to ſatisfy the unprejudiced on the ſubject; for in the caſe he relates, bleeding was tried under circumſtances peculiarly favourable to ſucceſs, and carried as far as the ſituation of the patient permitted: the particulars of the caſe may be ſeen in the memoirs Med. Soc. Lond. Vol. 1. and in my laſt pamphlet on this ſubject.* Thoſe who wiſh to ſee a more decided caſe if poſſible, may conſult that of the boy of Yorke related by Dr. Phyſick in the Med. Repoſ. before quoted, with my remarks upon it, in p. 292, of the ſame volume.†

Will any one believe, that if the diſeaſe were inflammatory, it would not have ONCE been cured by bleeding? and if in thoſe caſes, where from the actual madneſs of the dog being aſcertained, and the ſtrongly marked ſymptoms, no doubt could remain of the true diſeaſe, it has NEVER yet ſucceeded, can the theory upon which ſuch practice is grounded be admitted as correct?

It is worthy of notice, that in all the caſes, which originating from various cauſes, and of courſe appearing in different forms,

* Obſervations on *the arguments* of Prof. Ruſh, in favour of the inflammatory nature of the diſeaſe produced by the bite of a mad dog, 1801.

† The reader will there find, that bleeding was liberally and promptly tried; 72 oz. at four bleedings were taken away in 24 hours, without ſucceſs.

have been miſtaken for the diſeaſe produced by the operation of the canine virus, the diſpoſition to bite is conſtantly mentioned. In Dr. Burton's patient this ſymptom was ſtrongly marked; while in the true diſeaſe, ſuch a diſpoſition never appears: and further, that in all the imaginary caſes of the diſeaſe, the remedies exhibited were conſtantly found to ſucceed, however abſurd or oppoſite in their nature. I will not apply this remark to the prevention, becauſe it muſt be obvious that as not above one in twenty, ſicken who are bitten by dogs actually mad, it is impoſſible with any juſtneſs, to aſcribe the prevention to any external application or internal remedy. Confining the aſſertion therefore to the cure of the actual diſeaſe, I may ſay that the warm bath, cold bath and mercury, muſk and cinnabar (Tonquin remedy,) large bleedings, ſmall bleedings, and the famous quack Ormſkirk medicine, have all been ſaid to cure the dread complaint; but the ſame remedies have been ſo repeatedly tried under every poſſible chance, and without ſucceſs in caſes where no doubt could exiſt of the nature of the affection, that the unprejudiced cannot aſcribe the ceſſation of the ſymptoms in the inſtances of their exhibition to any virtue in them. In this reſpect indeed they are not ſingular, a ſimilar want of ſucceſs having unfortunately attended the practice of every phyſician who has given us the history of the treatment of the true diſeaſe, WHICH ALAS, HAS NEVER YET BEEN CURED!

APPENDIX TO THE ABOVE.

Since I ſent you the obſervations upon the caſe related by Dr. Burton, I have ſeen a paper on the ſame ſubject, in the Medical and Phyſical Journal of London, for May laſt, by Dr. R. Hall of Clement's Inn; and as it will ſerve the cauſe of truth, I beg you to publiſh the following extract therefrom.

After making the ſame remark that I have, reſpecting the uncertainty of the dog's madneſs, he proceeds,

"We are not told in this caſe, that any mode of prevention whatever was employed, ſo that the patient was probably left to indulge his apprehenſions of the conſequences of the accident; which appears, from the whole tenor of the account, to have made a deep impreſſion on his mind.

"The bite, we are informed, was inflicted on one of the lower extremities, but nothing is ſaid reſpecting the ſtate of the bitten part; whether it looked red, aſſumed an inflamed appearance, or underwent any change previous to the attack, or during the continuance of the complaint. We are indeed told, that the patient, after his convaleſcence, informed Dr. Burton, in anſwer to ſome inquiries made by him to this purpoſe, that he had felt a ſlight pain attended with an itching and uneaſineſs in his groin, for ſeveral days previous to his illneſs; but when it is conſidered that he made no complaint of this kind, either before the attack or during the intervals of the paroxyſms, as they are termed, nor was ever obſerved putting his hand to the bitten part, which is not unuſual with patients labouring under this dreadful malady, very little importance, it ſhould ſeem, can be attached to this account; more particularly, when the evident prepoſſeſſion of the patient, as to the nature of his diſeaſe, is taken into conſideration.

"The length of time which intervened between the infliction of the bite and the acceſſion of the complaint, in the preſent inſtance, is ſtated to have been twenty-four days, which is a ſhorter interval than uſual; for, in well marked caſes of hydrophobia, the diſeaſe ſeldom makes its appearance ſooner than five or ſix weeks after the accident. As, however, much may depend on the ſuſceptibility of the ſyſtem at the time the injury is ſuſtained, the virulence of the poiſon, and various other circumſtances, conſiderable latitude muſt, it is obvious, be allowed as to the period of the attack. But when, along with the abſence of moſt, if not all, of the diagnoſtic ſymp-

toms of true rabies, any unuſual deviation occurs in this reſpect, as was the caſe with Doctor Burton's patient, it affords additional ground to ſuſpect, that the ſymptoms may proceed from the operation of a cauſe wholly unconnected with the application of hydrophobic virus.

"Several days previous to the appearance of the diſeaſe, Dr. Burton, we are told, was informed that the patient had been dull and ſolitary, and that his friends, a few minutes before the attack, had found him two hundred yards from the houſe, apparently in a deep ſtudy. This fact, while it tends to prove that the mind of the patient was from the firſt in a very diſturbed ſtate, evidently militates againſt the ſuppoſition of rabid hydrophobia; for it is a leading ſymptom of this diſorder, that the patient cannot bear expoſure even to the air of a common room, without experiencing great uneaſineſs.*

"The ſymptoms enumerated by Dr. Burton, when he firſt viſited the patient, were, a dull pain of the head, watery eyes, dull aſpect, ſtricture, and heavineſs at the breaſt, and a high fever; all which are common to a variety of diſorders, and diſplay nothing characteriſtic of rabid hydrophobia. We are indeed immediately afterwards told, that the patient rejected every thing aqueous; and in a ſubſequent letter to Dr. Ruſh, who had requeſted more preciſe information reſpecting ſeveral particulars, we are given to underſtand, that he refuſed to ſwallow liquids, and that the ſight of water threw him into a convulſive agitation. But, admitting this ſtatement to be correct, it does not thence follow that the malady, under which the pa-

"* This extreme averſion to the contact or application of cold air or moiſture did not eſcape the notice of ſome of the more early writers on this ſubject. Among other ſymptoms, Cælius Aurelianus mentions it as one of the ſigns of approaching hydrophobia: His words are, "Inſueta etiam querela aeris, tanquam auſtrini, quamvis ſerena fuerit quies; item difficilis toleratio, atque tædium, et recuſatio imbrium."

tient laboured, was rabid hydrophobia; for it is well known to every intelligent practitioner, that ſuch ſymptoms are frequently concomitants of other diſeaſes. Innumerable inſtances of this kind might be adduced; but as the fact is too generally known to render that neceſſary, we ſhall only mention a few, which appear to us more particularly remarkable.

"Boerhaave relates a caſe, in which the difficulty of drinking, and conſequent dread of water, accompanied an acute fever, occaſioned by exceſſive heat and fatigue, ſuperadded to the intemperate uſe of ardent ſpirits.* A very ſingular caſe is recorded in the Edinburgh Medical Eſſays, vol. i. in which hydrophobia appears to have depended on an inflammatory ſtate of the ſtomach, without the moſt diſtant ſuſpicion of the patient having been injured by any rabid animal. Whether this might be in reality a caſe of gaſtritis, appears ſomewhat problematical, for few of the diagnoſtic ſymptoms of that affection were preſent; but be this as it may, the patient frequently ejected ſaliva from his mouth, and experienced all the horror and anguiſh at the ſight of water, which are ſo conſpicuous in perſons labouring under genuine hydrophobia. A caſe of hydrophobia ſupervening to a phrenitic attack is related by Dr. Raymond in the Appendix to the 5th vol. of the Medical Obſervations and Inquiries. We ourſelves once witneſſed this occurrence, during a phrenitic delirium, in a patient who rejected water and other liquids with a kind of horror, as often as they were preſented to him. The late fever at Leghorn, according to Dr. Palloni, frequently manifeſted itſelf by the appearance of hydrophobic and other extraordinary ſymptoms.† While theſe and other facts ſerve to explain many of the various and contradictory reports reſpecting the effects of different re-

"* Van Swieten Comment. Tom. iii."

[† In my Inaugural Diſſertation, I have related ſeveral other inſtances of a ſimilar affection occurring ſymptomatically.]

medies in rabies, they evince the neceſſity of a clear and accurate diſcrimination between it and other apparently ſimilar diſeaſes; ſince there ſeems but too much reaſon to ſuppoſe, that various affections of an eſſentially different nature have frequently been confounded with it, merely becauſe the patient had felt an averſion to water at ſome period of the diſorder.*

"Whoever attentively examines all the particulars of the caſe related by Dr. Burton, muſt, we think, be convinced that he has fallen into this error, and miſtaken an affection of a very different nature for genuine hydrophobia. From the very commencement of the diſeaſe, the delirium of the patient appears to have been attended with furor; he raved almoſt inceſſantly, and bit at every thing indiſcriminately within his reach; he was bled; bliſters were applied; and in every reſpect he was treated on the antiphlogiſtic plan. But although, by theſe means, the violence of the complaint was ſomewhat abated, it recurred with increaſed aggravation on the morning

* "What has proved the moſt frequent ſource of this error, we have every reaſon to ſuppoſe, is the application of the term hydrophobia to deſignate the diſeaſe itſelf: a term, which taken in its literal and etymological ſenſe, is merely deſcriptive of a ſingle ſymptom, which, ſo far from being confined to true rabies, is not an unuſual concomitant of various and very oppoſite affections." With a view to obviate this ſource of error, various terms have been propoſed by different writers on rabies as a ſubſtitute for that of hydrophobia, but all of them appear to be ſubject to more or leſs objection. It would, indeed, be difficult to find a ſingle term ſufficiently comprehenſive fully to expreſs that ſtate of the ſyſtem which is induced by the action of the rabid virus. Hygrophobia (Υγροφοβία), which the Greeks themſelves employed, is perhaps leſs exceptionable than moſt others, in as much as it is more extenſive in its import, and expreſſes not only an antipathy to water, but that preter-natural averſion to all fluids, whether in an aerial or more palpable form, which is ſo characteriſtic of true rabies; the latter term, it muſt be confeſſed, is ſomewhat leſs euphonous than the former, but if it be preferable in other reſpects, that is a conſideration of very inferior importance."

[* For this reaſon, and becauſe the ſymptom does not ſometimes appear in the true diſeaſe, I have long ſince propoſed the rejection of the term hydrophobia.]

of the third day from the attack, when we are told, he was found biting the bed-clothes; that his countenance was maniacal, his pulſe ſynocha, with ſtricture of the breaſt, difficult deglutition, laborious breathing, and a diſcharge of ſaliva. All theſe alarming ſymptoms were, however, at laſt, effectually ſubdued by copious and repeated bleeding: mercurial frictions were alſo reſorted to; but the complaint had evidently yielded before they were employed. During the ſhort ſpace of four days, the patient loſt 138 ounces of blood.

"From the hiſtory of this caſe it appears ſufficiently obvious, that violent inflammatory action and acute pyrexia prevailed throughout the whole progreſs, and conſtituted the principal part of the diſeaſe: circumſtances which are never obſervable in well defined caſes of hydrophobia. On a careful review of the whole concourſe of the ſymptoms, as detailed by Dr. Burton, we are of opinion, that they muſt appear to every impartial obſerver, far more characteriſtic of a phrenitic attack than of true rabies; for in phrenitis, the raving is almoſt inceſſant, with few intervals of reaſon; whereas in rabies, the paroxyſms are ſhort and ſudden, and the patient is ſeldom bereft of all conſciouſneſs and perception of what is paſſing around him. In phrenitis, moreover, the delirious furor early manifeſts itſelf, and the patients are generally outrageous; but in rabies, on the contrary, timidity is a prevailing feature, and the patient ſeldom attempts to injure any of the by-ſtanders, or becomes outrageous, till towards the very cloſe of the malady. The only ſymptoms in which the diſeaſe under conſideration bore the ſlighteſt reſemblance to rabies, were, the patient's refuſal to ſwallow liquids, and the convulſive agitation he is ſaid to have experienced at the ſight of water. Now theſe ſymptoms, as already ſhewn, are no uncommon occurrence in phrenitic, as well as in maniacal affections. In phrenitis, beſides, it is well known, that the mind frequently recurs to objects which had before made a deep im-

preſſion on it. That this was the caſe in the preſent inſtance, is clearly evinced by the patient continually warning people to keep at a diſtance from him, for he had been bitten by a mad dog. We are fully aware that the deſiderium aut cupiditas mordendi is given as a part of the character of this diſeaſe by ſeveral Noſologiſts, and that many writers conſider it as a proper and inſeparable ſign of rabies; but whatever ſtreſs may be attached to this circumſtance by ſome authors, it can only be conſidered as a ſymptom of delirium which is common to ſeveral diſorders, and therefore furniſhes no proof of the patient having been affected with canine madneſs.

"With regard to the diſcharge of ſaliva in this inſtance, it ſeems altogether to have ariſen from impeded deglutition, and the convulſive action of the muſcles of the throat and fauces, and is well known to be a frequent occurrence in epileptic as well as in maniacal and phrenitic affections; to the laſt of which the diſeaſe in queſtion appears to have had a more ſtriking reſemblance, not only in the mode of its attack, but in its ſubſequent ſymptoms, than to the peculiar malady reſulting from the bite of a rabid animal. It was not marked by any of the leading ſymptoms of hydrophobia rabioſa; ſuch as an averſion to noiſe and cold air, to the ſound or contact of water and other liquids, to any violent contractions of the lower jaw, any ſtrictures about the throat, with occaſional apprehenſions of immediate ſuffocation or ſtrangulation, any violent efforts to diſengage from the mouth a thick and viſcid ſaliva, any change of voice, inceſſant reſtleſſneſs, and a marked averſion to a recumbent poſture. Laſtly, it not only differed from this dreadful diſorder by the abſence of all theſe ſymptoms, but in its termination, which was ſo unlike that of true rabies, hitherto deemed incurable, that it yielded in leſs than a week to copious and repeated bleedings, and the employment of other reme-

dies:—means which, in the hands of other practitioners, have uniformly proved inefficient. On the whole, so far as we can form any judgment from a comprehensive view of the present case, there seems, we think, every reason to conclude that, whatever might be the disease under which the patient laboured, it was not genuine hydrophobia."

Singular Case of the Alteration of the Colour of the Hair, during Parturition. Read before the Medical Lyceum of Philadelphia, by Wm. P. Dewees, *Dec. 24th*, 1806.

THE following case is communicated more from the peculiar circumstances which attended it, than from its possessing any particular practical importance.

On the 21st February, 1804, I was requested to visit the wife of Reuben Elliot, whose labour was attended with convulsions. I found her under the care of a midwife, who gave me the following account of her. "She had been called to her the evening before, but found very little appearance of labour except pain; the os tincæ was not dilated; there was no secretion of mucus; the pains were irregular in recurrence and force. At five in the morning, (eight hours after her first seeing her) she was seized with convulsions; soon after there was a discharge of the waters; pains continued as before; about an hour after the first fit she was again seized, and the convulsions were after this repeated with considerable frequency and great violence." At nine o'clock, P. M. I was sent for, that is, four hours after the commencement of the fits. I found the uterus but very little dilated, so little so, as not to be able to determine the precise situation of the head.

During my ſtay, the convulſions were very frequent and ſevere; I conceived that nothing but extenſive and repeated bleedings would relieve her; her pulſe was full, tenſe, and ſtrong, in the intervals of the fits; but was extremely frequent, and almoſt imperceptible, when they were about to ceaſe; the ſkin was hot and dry, except at the cloſe of a convulſion, at which time it became cold and clammy; thirſt great; when interrogated appeared much confuſed; complained at times when rouſed of great pain in the head; the breathing laborious, and ſometimes, eſpecially immediately after the fit, ſtertorous; the face much ſwelled, and perfectly livid during the paroxyſms; as the lividity wore off, the pulſe became more expanded, leſs frequent, and hard, and this took place in proportion to the reſtoration of reſpiration.

Many times my patient was threatened with complete ſuffocation, either from ſpaſm, a great quantity of bloody mucus that ſeemed to fill the trachea, or both.

As nothing could immediately be done as I conceived, but bleeding her extenſively, I ſent Mr. Turpin, and Mr. Stark, two gentlemen who were then attending lectures in the city, to ſtay with her, and bleed as much, and as often as ſhould be neceſſary, either to ſuſpend the fits, or to dilate the os tincæ ſufficiently, to allow of artificial delivery. This required a conſiderable quantity of blood; about fifty ounces were taken at four bleedings from ten o'clock in the morning, until five in the afternoon. On my calling at this time, I found the uterus ſufficiently dilated to admit of delivery, and propoſed employing the forceps, in preference to turning, as the waters had been long drained off, although the head had not yet paſſed the ſuperior ſtrait.

The pains, and convulſions were now leſs violent, and leſs frequent; and the woman perfectly ſenſible in the intervals.

I sent her husband for my forceps, while I visited a patient at some distance. On my return I found the patient in the greatest affright, as the midwife had incautiously alarmed her about the use of the instruments, and she was soon after seized with a very violent fit, which I have no doubt was hastened, and protracted by my presence.

On my going to the bedside I observed a whiteness on the fore part of her head which I had not observed before, and called for the candle to view it more particularly, by which, I discovered that the hair anterior to the coronal suture was changed completely white, excepting where it was here and there interspersed with locks less completely blanched or of its natural hue. I called the attention of the two gentlemen above mentioned, as well as that of the women present, to it, and they all agreed it must have changed in a very short time, and since my last visit.* I immediately proceeded to deliver her with the forceps, which I effected in a short time. She had but two fits after her delivery.

On my visiting her the next day, I found the hair much less white than the preceding evening, and in about four or five days it became nearly natural. I was informed a few days since by the midwife who attended her at that time, and has since delivered her, that the hair that had undergone the change, remains lighter than the rest of her hair.

To what circumstance shall we attribute this change of the hair? Did it arise from fright, anxiety, or the convulsions themselves exerting a particular influence on this portion of the scalp?

I am inclined to believe it must have arisen from some peculiar operation of the mind, as we have upon record similar instances, wherein it pretty evidently appears that, terror has ope-

* I was absent about an hour, or perhaps not more than three quarters.

rated this effect; I shall therefore take the liberty of relating two. Schenkius* relates the story of Don Diego Osorius, a noble Spaniard, being in love with a young lady of the court, had prevailed on her to a private assignation in the garden of the king; they had been there but a short time before they were betrayed by the barking of a dog; Diego was seized by the guards and thrown into prison: as it was a capital offence, he was condemned to die—he was so terrified at hearing his sentence, that in the course of the night he became grey as if far stricken in years, which so moved the king's compassion, as to pardon him.

Boyle† tells us of a captain in the Irish army, who was about to deliver himself up to Lord Broghil the commander of the English forces, agreeably to a proclaimed pardon, to those who would return to their allegiance, being intercepted by a party of the English; the governor being absent, the poor fellow became so alarmed least he might be put to death before his return, that his hair became white in parts, while others retained their original red colour. These cases would seem to point out a particular influence the mind has upon the hairy scalp, but how this influence is excited we cannot pretend to say.

There is one circumstance in this case, and indeed in all others of the kind as far as I have observed, that is worthy of notice—which is, the almost imperceptible pulse near or at the cessation of the convulsions, and its gradual augmentation of volume, and diminution of frequency in proportion as respiration becomes better established. Does this not militate much against Dr. Beddoes' idea of the pulse becoming frequent in proportion to the oxygenation of the blood?

WILLIAM P. DEWEES.

* As quoted by Turner, lib. 1. p. 2. † Exper. Philos. Vol. 1. p. 90.

An Account of two Cases of Fever, induced by the Bite of a venemous Insect, and cured by copious Depletion. Communicated to MR. WILLIAM STEPTOE, *Student of Medicine in the University of Pennsylvania, by* DR. SAMUEL K. JENNINGS, *of Virginia.*

CASE I.

MRS. OWEN was bitten by an insect supposed to be a spider. About sunset she felt a peculiar sensation in the skin over the right hypochondrium. On examination, a small wound was discovered which had a double puncture, surrounded by a white elevated circle of about one inch in diameter. In a few minutes she perceived a pain commencing in the wound; thence quickly passing into her loins, and, in a very short time extending itself universally over the whole system. She complained of the pain being in her head, loins, hips, shoulders, and then again in her head, with irregular alternation, and all in the space of half a minute. It seemed impossible for her to rest a moment in any attitude. In a word I could conceive of nothing short of the rack which could exceed her distress. Various nostrums were tried in vain. About midnight she was bled fourteen ounces. This evacuation afforded a momentary relief. But in a short time the violent symptoms returned, and continued without mitigation till ten o'clock the next day, at which time I arrived. Her pulse was as if natural. But the violence of the pain was such, that, I suspected a degree of depression, and proceeded to take, 14 oz. of blood. Her pulse seemed to yield a little, and although I had adopted that excellent opinion of Dr. Rush, "that fever is an unit," yet the novelty of the case, led me to act rather feebly.

Supposing, however, that the continuance of the pain, might in part, be owing to the retention of some improper matter in the intestines, I gave her 60 grs. of jalap, intending a speedy

evacuation. After waiting two hours for the operation, I deſpaired of the effect, and aſcribed the failure to the preſence of that kind of torpor of the inteſtines, which attends highly inflammatory and malignant fever. Supported in this opinion by the idea of "the unity of diſeaſe," at twelve o'clock I drew 12 oz. of blood. Thinking that a dryneſs of the inteſtines might in part, have prevented the operation of the jalap, about one o'clock I gave her a double portion of an infuſion of ſenna, made conſiderably dilute. Waited till four o'clock for the operation; but in vain. Being now ſtill more ſuſpicious and even confident of a depreſſed ſtate of the blood-veſſels, I took eight ounces of blood. In the ſpace of half an hour, the arterial action increaſed to ſuch a pitch, as to equal any I ever ſaw of recent pleuriſy. Immediately I proceeded with confidence and drew 16 oz. more of blood. The happieſt effects were the conſequence. The pains nearly ſubſided, and the pulſe became ſoft, free, and very nearly natural. At ſix o'clock I gave her eight grains of calomel. She dropped into a diſturbed kind of ſleep, and reſted indifferently till eleven o'clock; at which time the calomel excited naufea, terminating in a catharſis, and operated as uſual. After the operation, the patient reſted pleaſantly till morning, and awoke quite well, except only that there was a moderate degree of debility. Nothing further was done, and in a few days ſhe recovered her ordinary health.

In this caſe 64 oz. of blood were taken from the patient in the courſe of 20 hours. And prior to theſe evacuations cathartic medicines given in double and even in quadruple portions, would produce no effect. It is remarkable, that the calomel laſt given, operated no ſooner, nor in a more copious manner, than a ſimilar doſe in ordinary caſes would have done without the addition of jalap, or infuſion of ſenna.

CASE II.

Mrs. Brown was bitten by an insect, on the top of the foot. At the first it gave no pain; but, in about 15 minutes a peculiar painful sensation ascended up the affected limb, and spread itself over the whole system. The symptoms so nearly resembled the case of Mrs. Owen, that, I have no doubt the same species of spider had produced them. The bite was first perceived in the evening. Her pain through the night was excruciating; insomuch, that, she described it, as by far exceeding the most violent pains of parturition. All the remedies of the neighbourhood were tried in vain. The next morning I was sent for, but was absent. By the advice of one of my pupils, however, the messenger returned, and had her bled about 14 oz. at mid-day. As in case I. the blood-letting afforded relief for a short time. But the violent symptoms soon returned, and continued till about sunset, when I arrived to her relief. Finding her pulse very tense and active, I took from her 14 oz. of blood. Her pulse became softer and her pains abated. In the course of half an hour, however, the action of the artery again increased. Emboldened by the success which had attended a similar practice in the former case, I proceeded without hesitation to repeat the blood-letting and took about 12 oz. The effects were as at the first, and the relief afforded was a little more complete, and of longer duration. But in less than one hour her pulse became more tense than at the first, and the pains were considerably increased. The blood-letting of course was again repeated, to the amount of 10 oz. The same good effects again followed the evacuation, and were again, still more permanent. In the course of an hour, the arterial action and pains were again becoming violent. Believing the stimulus of the venom, to be more than sufficient to counteract the debility, which must certainly have followed such an amazing loss of blood in any ordinary case, and being still confident of success, I ventured to take 14 oz.

more of blood. The effects were now very conſiderable. She complained of faintneſs, on being raiſed up in her bed; ſtill however, ſhe was not without ſome degree of pain. She was then directed to make a free uſe of an infuſion of ſenna, to which was added a portion of tartarized antimony, until it ſhould produce a conſiderable evacuation. As in caſe I. when the catharſis was complete, her diſeaſe diſappeared, and nothing farther was done. In this caſe 64 oz. of blood were taken within the ſpace of nine hours, and 50 oz. between the hours of ſix and nine o'clock in the morning.

Do not theſe two caſes ſtrongly argue that "fever is an unit," by whatever cauſe it may be induced ?

Is it not highly probable, that a ſimilar practice would relieve the painful fever, conſequent on the bite of a ſnake ?

I think it would be proper, in treating the ſnake bite, not only to introduce general, but, alſo topical blood-letting. It may be obſerved, that the venom which was introduced into the ſyſtem by the inſects, in the caſes of Mrs. Owen and Mrs. Brown, excited little, if any pain or ſwelling in the part firſt affected. It would ſeem that the virus is not perceived until it has ſpread its baneful powers over the whole ſyſtem. But it is well known, that the venom of the rattleſnake gives immediate alarm to the ſurrounding veſſels, and there is inſtantaneous reſiſtance made to its progreſs, as is evident from the ſpeedy pain and circumſcribed ſwelling, whic h take place. It would therefore be proper to extend the general blood-letting according to general appearances, and by ſcarifications and cupping, to circumvent the topical affection. As the ſwelling and pain progreſs, the topical blood-letting ſhould be proportionally extended.

That the two caſes here deſcribed were the effects of the ſpider's bite, I have no doubt. Several caſes have occurred within

the bounds of my acquaintance, in which, the little venemous agent was seen to inflict the wound, or perceived immediately on having done the execution. In all these cases the effects were so intirely similar, that by every principle of analogy, it must be admitted, that all were produced by similar causes.

Do not the symptoms as described in case I. considerably resemble many cases of the yellow malignant fever which appeared in Philadelphia, in 1793?

SAMUEL K. JENNINGS.

P. S. The case of Mrs. Owen occurred in the autumn of 1805; that of Mrs. Brown about the 1st. of October, 1806.

History of a Case of Mania, which was succeeded by Pleurisy, and a peculiar Form of Mortification in the Toes, in a Letter addressed to DR. SAMUEL STRINGER, *of Albany, New York. By* JOSEPH KLAPP, M. D.

Philadelphia, January 7th, 1807.

MY DEAR SIR,

WHEN I last was honoured at your own house in Albany, with a flattering share of that urbanity of manners, and kindness of attention, which have long since attracted the admiration and esteem of an extensive round of friends, I promised myself the enjoyment of writing occasionally to you. But incidents of a variegated nature, too numerous and uninteresting to be recounted in this place, have unexpectedly interfered with the earnest wishes of my heart; a leisure hour has at length occurred, and no consideration can induce me to neglect the present opportunity of reviving in the memory of my aged friend, the recollection of his former pupil in medicine. As I am well acquainted with your great attachment to the practical department of our profession, I have ventured to select

for the ſubject of this letter, the hiſtory of a caſe of mania, which was ſucceeded by pleuriſy and a peculiar form of mortification in the toes. During my reſidence in Lancaſter, the caſe to be related occurred in my practice, under circumſtances of ſuch a nature, as induced me to regiſter a circumſtantial account of it, with the intention of ſubmitting it on ſome future occaſion to your conſideration.

On the 14th of December, 1805, I was requeſted to viſit an Iriſhman of the name of O'Don, who was repreſented to me as labouring under a recent, but violent attack of derangement. The poor man was found in a very ſerious condition, his countenance was wild, and diſtorted into a maniacal aſpect, his ſkin was covered with a cold and clammy ſweat, and the pulſe, the chronometer of diſeaſed, as well as healthy excitement, was in ſome degree accelerated, and beat with a ſmall but compreſſed volume. One of the attendants favoured me with the neceſſary intelligence of the man's habits, and the manner in which the indiſpoſition had firſt invaded his ſyſtem. I was informed that O'Don was a day labourer, aged about forty years, who had long been addicted to various acts of imprudence, ſuch as a ſlaviſh uſe of ardent ſpirits, expoſing himſelf to the rigour of the weather, when in a ſtate of intoxication, and other kinds of injurious hardſhips. That during the three or four preceding days, he had complained of being unwell, and in order to drive out what he believed to be a forming fever and ague, he had poured in large, and repeated doſes of a very palatable medicine;* but unluckily the antidote *for once*, proved inadequate to a cure, and the diſappointed patient was by ſome friend more cautious than himſelf, adviſed to have recourſe to a remedy,† which was attended with an operation upon his ſenſe of taſte and ſtomach, in a conſiderable degree, oppoſite to the one which his own experience in *diffuſible ſtimuli* had previouſly dictated. The ſecond remedy, however, was not more ſaluta-

* Whiſkey. † An emetic.

ry in its conſequences that the firſt; for though it was pretty ſevere in its operation, yet it left the fellow worſe than it found him. In a few hours the ſymptoms of indiſpoſition were greatly multiplied; he became very reſtleſs, and now and then would betray a few mental irregularities; his countenance was frequently obſerved to be ſuffuſed with redneſs, and he complained of a pain in his head. That about ten o'clock laſt night, he became evidently more indiſpoſed; he was agitated by contending paſſions, and ill-founded ſuſpicions, to ſuch an alarming degree, as to make it an extremely difficult taſk for half a dozen men to keep him in neceſſary ſubjection.

In this wild and refractory condition I found him, early on the enſuing morning. From the ſymptoms of his caſe, which have been given, and from the aſſurances which I had of his having long been an intemperate man, I naturally concluded that he was affected with lunacy from ſtrong drink. The uſual remedies for ſimilar caſes of inſanity were reſorted to, ſuch as venæ-ſection, bliſters, nitre and calomel powders, occaſional laxatives, ſilence, &c. accommodated and perſevered in, with a conſtant regard to the ſtate of the ſyſtem, and the ſtage of the diſeaſe.

By this plan of treatment, in the ſpace of two weeks, I ſo far ſucceeded in relieving the patient of the violence of his diſeaſe as to render him wholly inoffenſive, and his behaviour in moſt reſpects ſtrongly indicated a return of the reaſoning powers of his mind. His pulſe from being morbidly quick, compreſſed and ſmall, had become only a few pulſations more frequent than common, it was ſoft and entirely unburthened of conſtriction. While in this highly promiſing ſituation, and a few days after the dawn of returning reaſon had foretold a ſpeedy recovery, and at a period too, when feeble morbid action was only competent to produce a few ſlight appearances of remaining illneſs, ſuch as a belief in an irrational notion which was contracted in the beginning of the diſeaſe, and occaſionally

an improper remark, I was unexpectedly called upon to avert the impending danger of a new ſet of ſymptoms. I found poor O'Don complaining of a violent and conſtant pain between the ribs of the left ſide, which was aggravated by reſpiration; he was affected with a cough that was diſtreſſing almoſt beyond indurance, nothing was expectorated but a little frothy mucus ſtreaked with blood. His pulſe was ſynocha or tenſe and full, ſkin dry and huſky, and his reſpiration was hurried. Sixteen ounces of blood were immediately taken from the arm; a mercurial laxative was exhibited, and barley water was ordered for his common drink. At my next viſit I could not diſcern that any abatement of the painful ſymptoms had been accompliſhed, the lungs appeared to be quite as much diſeaſed as they were the day before, the tongue was covered with a white fur, and the pulſe beat high to the tune of pleuritic inflammation. But I have now to mention one important change for the better, which had occurred in the courſe of the laſt twenty-four hours; the legal empire of reaſon had been completely re-aſſumed. Inſanity no longer appeared to be the indiſpoſition of my patient, for he now returned me rational anſwers to numerous queſtions which were propoſed to him by way of experiment.

After I was firmly convinced that the man no longer labourcd under mania, which was his firſt diſeaſe, two important theories in the medic art intruded upon my mind, the incompatibility of oppoſite kinds of diſeaſes at the ſame time in the whole ſyſtem as revived and extended by Mr. Hunter; and the unity of morbid nature as happily diſcovered by the great Dr. Ruſh. The doctrine advocated by Mr. Hunter, I ſuppoſe, was deduced from the obſervation that diſeaſes under circumſtances of force of impreſſion, and prediſpoſition in parts, were capable of ſuperſeding each other;* and the broad and comprehenſive

* The theory which ſuppoſes that different diſeaſes cannot prevail at the ſame time in the arterious ſyſtem, was familiar to many phyſicians before the time of John Hunter; it is advanced in a work publiſhed by Jacobus Verſellonus, in 1722, entitled, De Pudendorum morbis et Lue Venerea.

principle of our learned countryman, is ſupported by correct philoſophical views of the nature of diſeaſed and healthy excitement. To the province of which of theſe principles does the great change in O'Don's caſe belong for explanation? Was the irregular or convulſive action in the blood-veſſels of the brain, which conſtituted mania, removed by the ſupervention of another diſeaſe in the ſyſtem; or ſhall we conclude that the diſeaſed action in both conditions of the ſyſtem was of the ſame kind, that the prediſpoſition to inſanity was nearly cured by the remedies uſed, and that ſupervening debility in the pleura, was converted by weak morbid action of the arterious ſyſtem into pleuritis? As my chief object in this letter is to give an impartial detail of facts, I will leave theſe queſtions, though of great importance both in a practical and theoretical point of view, undecided for the exerciſe of your ſuperior judgment, and return to my patient. As the man was groaning under the preſſure of ſeveral inflammatory ſymptoms, a vein was again opened, when a pint of blood was taken from him; the demulcent drink rendered more expectorant by the addition of gum arabic was continued, and a large epiſpaſtic plaſter was applied over the pained part on the affected ſide. The next day O'Don was much better notwithſtanding the extenſive veſication, and a ſenſe of great heat which the bliſter had occaſioned. The nurſe informed me that he ſlept more during the laſt night, than he had done any preceding one ſince the beginning of his derangement. The force of the fever and pain in the ſide were greatly abated. To day the pulſe was ſynochula, or tenſe, ſmall and frequent, the cough was not ſo painful; it was now attended with an eaſy and copious expectoration. But among all theſe favourable appearances, nothing afforded more ſatisfaction than the circumſtance of his ſtill retaining the powers of his mind unimpaired by morbid impreſſions. As the ſubſequent ſtages of this diſeaſe were not attended with any thing of ſufficient importance to be recorded, I will not treſpaſs on your patience by going into an unintereſting detail of particulars, but will content myſelf with obſerving in a general way, that in about

eight or ten days the pleuritic ſymptoms nearly, or quite ſubſided. In about one month, however, from the commencement of O'Don's illneſs, and at a period when both forms of the diſeaſe had to all appearances left him in a convaleſcent ſtate, the nurſe by accident diſcovered that an affection of a ſingular kind, had begun upon the ends of two or three of his toes of both feet. At my next viſit I was made acquainted with the fact; upon examination, I found, not a little to my ſurpriſe, that a mortification had actually invaded the toes of both feet, and had already extended up them near half their length. The patient declared, that previous to being told by the woman of the affection, he had been inſenſible to its influence, except that for a few days paſt, he was aware of a numbneſs or an impaired ſenſibility in the ends of ſeveral of his toes. The black ſpots which were in a ſtate of mortification, occupied the very extremities of the toes, the parts which were then ſuffering under the advances of the diſeaſe had a red appearance; at this period I could not obſerve that the feet were ſwelled, or the ſkin diſcoloured. The uſually reſorted to criterions of the condition of the ſyſtem, did not indicate any conſtitutional diſeaſe, the tongue looked healthy, and the radial artery only beat the pulſe of debility.

For the ſake of being more certain of the nature of the diſeaſe, I intentionally omitted doing any thing to arreſt its progreſs until the enſuing day. The next morning, however, the appearance of the man's toes convinced me, that further delay in having recourſe to medicine, would in all probability, be attended with dangerous conſequences.

The mortification had not only extended itſelf much further up the toes, but his feet and ankles were now conſiderably enlarged by tumefaction. The cuticle of ſome of the affected toes had become detatched, and in ſeveral places the cutis exhibited an inflammatory aſpect. The patient informed me that ſince my laſt viſit, his feelings had experienced a very great al-

ſeration, that the dulneſs of ſenſation, and ſlight uneaſineſs which had affected him for a few days back, had been during the latter part of yeſterday, ſuperſeded by an entire loſs of feeling in the ends of his toes, and darting pains through his feet and ankles, which had been ſo conſtant and violent as to occaſion him a ſleepleſs night. His pulſe had a quickneſs ſuperadded to its ſtate of yeſterday, which told of the febrile condition of his body; and the various ſymptoms of the caſe taken collectively, I muſt confeſs, cauſed me to entertain ſerious apprehenſions for the ſafety of the patient. But the conſiderable ſucceſs which had crowned my endeavours on the previous occaſions, invited me in the preſent one to continue to diſpute every inch of ground with death. With the point of a lancet, the mortified integuments were deeply ſcarified in ſeveral places; pledgets of lint ſpread with baſilicon ointment, impregnated with ſpirits of turpentine, were next applied to the toes, after which each foot and toes were included in a large emollient cataplaſm.

Notwithſtanding I was aware that an Engliſh ſurgeon had repreſented the cinchona as a very doubtful remedy in this peculiar kind of mortification, yet, on account of different experience which other phyſicians have met with, I determined to afford our American antiſeptic a fair trial in this caſe. Accordingly O'Don was ordered to take a drachm of the pale bark every hour, in a little plain water, which was requeſted to be continued without any interruption, until countermanded. As Mr. Pott has recommended a treatment of this diſeaſe in ſome reſpects diſſimilar from the one which I have thought proper to adopt, it may be conſidered neceſſary that the curative indications which I purſued in this caſe ſhould be mentioned. The commonly ſubſcribed-to maxim in medicine, that oppoſite forms of diſeaſe* cannot exiſt at the ſame time in the ſame

* It is in this place neceſſary, for the ſake of ſcience, and a deſire to be underſtood, to aſſign ſome reaſon for having worded this maxim differently from what

part of the body, renders it extremely probable, that to arrest the progress of mortification, whether it is the consequence of preceding inflammation, ligatures, cold, &c. or if it arise from causes not discoverable by the physician, the method of cure cannot vary in any considerable degree. After that wary attention is given to particulars, which every case more or less requires; to produce new and healthy action throughout the whole system in common, and in the affected parts in particular, by the use of general and local remedies, ought to be the constant aim of the physician.

you commonly find it done in books on medicine. To mention in a general way, that I have adopted the American arrangement in pathology, and consequently could not commit myself so much as to use the word disease in the plural number, may not be deemed a satisfactory explanation for this instance of a wide departure from an old custom. However, to avoid every danger of having my real meaning misconstrued, which a reserve of medical sentiments on this subject might occasion, I am willing to hazard, as far as the circumscribed limits of a note will admit, a few of the great number of arguments which can be produced in favour of the theory which supposes disease to be an unit. A catenation of the same causes will, when operating in a certain progressive order, necessarily produce effects in nature the same, but which will always be presented under different appearances, according to the circumstances under which the producing causes acted. For example, bodies which have a greater affinity for caloric than what water has, will, when their affinities are excited produce ice, hail, frost, or snow, according to the circumstances under which the causes acted upon the water.

Electricity will, when eliminated from bodies which contain it, under different circumstances assume very different appearances; when disengaged by friction, it is presented in its ordinary form, and when evolved by the oxygenation of metals, the electric fluid assumes the form of Galvanism; notwithstanding this diversity of appearance, electricity is, like disease, an unit. Now as every possible variety of disease which can assail the animal body, is always preceded by the same set of causes; to wit, stimuli, as the remote, debility as the predisposing, irritants as the exciting, and irregular action as the proximate; it follows according to every rule in sound logic, as a matter of course, that the nature of the product will be the same, however variegated the appearance collateral circumstances may constrain morbid nature to assume. But the theory which contends for a multiplicity of diseases sui generis, and every one of a totally different nature, is very objectionable, in the first place, because it implies a plurality of mor-

Mr. Pott objects to the cinchona becauſe in moſt of the caſes it has failed in his hands to produce a cure, and recommends opium to be uſed in its ſtead; he is likewiſe oppoſed to active local remedies, through an opinion that they will injure by occaſioning irritation and pain. But as one of the indications of cure in mortification, is to rouſe the inactive veſſels of the affected parts into new and healthy excitement, and thereby counteract weak morbid action, I cannot at this time feel conſcious of any juſt foundation for Mr. Pott's opinion. I have no doubt but that a bliſter would as ſpeedily arreſt this form of mortification, as profeſſor Phyſick has found it capable of, in a number of inſtances, where the mortification was occaſioned by obvious cauſes.

bid natures, and this concluſion which the old doctrine will lead directly to, in my eſtimation is as inconſiſtent as it would be to inſiſt on the exiſtence of different kinds of fire, electricity and light, becauſe theſe bodies diſplay oppoſite phenomena when diſengaged under different circumſtances. In the ſecond place, the theory muſt be defective, becauſe no one can correctly conceive of actions virtually different from each other, as action is the ſame whether we witneſs it in the direction of a plain or a circle. In the third place, by a certain variation of circumſtances, ſpaſms, convulſions, preternatural heat, itchings, ſhocks, and ſuffocated excitement, the known forms of diſeaſe, may be changed into each other; ſo may ice, hail, froſt, and ſnow, very familiar forms of a ſingle ſubſtance, be converted into each other by a change of circumſtances; but it muſt appear evident if what I have termed forms of diſeaſe, are to be regarded as ſo many diſtinct diſeaſes, that the fortuitous efforts of nature, and unlimited ſkill in the medic art would no more be adequate to change them into each other, than the botaniſt would be competent to convert plants belonging to oppoſite claſſes of the ſexual ſyſtem into each other, or the chemiſt to change iron and copper into gold and ſilver.

I have converſed with phyſicians, who affect to believe that Dr. Ruſh's theory of diſeaſe will not be found when critically examined, to vary much from the old one maintained by Hoffman, Cullen, and other noſological writers; and who are too much in the habit of declaring that the doctor's pretended improvement is nothing more than "a far-fetched and little worth" innovation in language, and conſequently a uſeleſs diſpute about words. I muſt acknowledge that I have often been at a loſs to determine whether ignorance, or ill-natured prejudice, is moſt abundant, and over-ruling in the minds of ſuch unworthy members of the fraternity.

I will now proceed to relate, how far the remedies made uſe of in the preſent caſe, proved competent to the attainment of the objects in view. On the ſecond day after the commencement of the above treatment, no obſervable abatement had taken place in the ſwelling of the feet, the pain and diſcoloration of the ſkin remained as the day before; but it was plain that the progreſs of the mortification was leſs rapid than it had been. The ſtate of the pulſe indicated that the tonic and ſtimulating remedies were working their cuſtomary effects on the ſyſtem, it was leſs frequent and fuller. The incitant applications to the toes, and the emollient poultices were continued, and the uſe of the cinchona in the form of decoction was rigidly perſevered in. At my third viſit, which was on the enſuing day, the man was found much better, the diſcharge from the toes contained a ſmall quantity of healthy pus, the mortification had not advanced any ſince yeſterday, the pain was leſs ſevere, but ſuch a degree of tenderneſs had been left in the gaſtrocnemii muſcles, that the patient was neceſſitated to lie in bed with his legs bent. On the next day the pain and ſwelling of the feet were much leſs, the proceſs of ſloughing had begun, ſuppuration was copious, and the tenderneſs of the legs, which had been ſo much complained of the day before, had now nearly ſubſided. By a continuation of the cinchona, and ſuch local remedies as the ſtate of the parts required, the diſpoſition to mortification was completely eradicated, and in the courſe of about one week or ten days, the dead parts were caſt off entirely. During the remainder of the patient's indiſpoſition, nothing of ſufficient importance occurred to be related; the ſurfaces of the ſores after the ſeparation was completed between the dead and living parts, preſented a favourable aſpect, and incarnation was nearly accompliſhed at the time the man left town.

After a renewal of unfeigned aſſurances of that grateful eſteem and warm friendſhip, which have long been felt for you, I will conclude this letter, by ſubſcribing the name of your humble ſervant,

JOSEPH KLAPP.

The following very intereſting Paper is tranſlated from the Supplement to the Madrid Gazette, of the 14th October, 1806. A Copy of which was preſented by the Marquis de Caſa Yrujo, to the American Philoſophical Society.

ON Sunday the 7th of laſt September, Dr. Francis X. de Balmis, honorary ſurgeon of the Royal Chamber, had the honour of kiſſing the hand of his Majeſty, on his return from a voyage round the world, undertaken with the ſole view of carrying to all the Spaniſh dominions beyond ſea, as well as to thoſe of other nations, the ineſtimable bleſſing of vaccination. His Majeſty deeply intereſted in the ſubject, informed himſelf of the principal events of the expedition, and was wonderfully gratified by finding that the happy reſults had far exceeded the expectations formed when it was planned.

The perſons attached to the expedition were, ſeveral phyſicians, with aſſiſtants, and 22 children, who had not had the ſmall-pox, and were deſtined to preſerve the valuable fluid, by a ſucceſſive vaccination from arm to arm, or one after another in the courſe of the voyage. They ſailed from the port of Corunna, under the direction of Balmis on the 20th November, 1803. They firſt touched at the Canaries, then at Porto Rico, and from thence proceeded to Carracas. On leaving the port of Laguira in that province, they ſeparated into two parties, the one ſailing for South America under the care of the ſub-director Dr. Francis Salvani; the other under Dr. Balmis for the Havannah, and from thence to Yucatan. In this province they again made a diviſion. Dr. Francis Paſtor proceeded from the port of Siſal to that of Villahexmoſa in the province of Tabaſco, to propagate vaccination in the royal city of Chiapa, and as far as Guatimala, paſſing through a tedious and rough country for 400 leagues to Oaxaca; whilſt the other party arriving ſafely at Vera Cruz, not only paſſed through the whole viceroy-ſhip of New Spain but the interior provinces, from whence they were to return to Mexico, which was the point of reunion. Having profuſely diſſeminated this preſervative from

the natural small-pox, through the northern parts of Spanish America, to the coasts of Sonora and Sinaloa, and even to the Pagans and new converts; having established in each capital a central *society*, composed *of the highest* authorities and most zealous medical characters, to preserve it as a sacred depositе, for which they were answerable to the king and posterity. The director determined, that this part of the expedition, which had been crowned with the most brilliant success, should carry to Asia this consolation of humanity; and having overcome some difficulties, they embarked at Acapulco for the Philippine islands, which was the ultimate point prescribed to them.

The great and pious designs of his Majesty being favoured by Providence, Dr. Balmis accomplished his passage in little more than two months, taking with him from New Spain 26 children to be successively vaccinated; and, as many of them were very small, they were placed under the care of a matron from the orphan house of Corunna; and in this, as in the former voyages, the greatest attention was paid to their cleanliness and comfort. The expedition having arrived at the Philippine islands, propagated this specific through the islands subject to the dominion of his Majesty.

Dr. Balmis having thus closed his philanthropic mission, resolved, with the consent of the captain-general, to extend the beneficence of the king and the glory of his august name to the utmost confines of Asia.

In consequence, vaccination was introduced through the vast Archipelago of the Visayas islands, whose kings, heretofore constantly at war with us, now laid down their arms, struck with the generosity of an enemy that brought them health and life, when they were grievously afflicted by an epidemical desolating small pox. This evil was equally prevalent in the Portuguese colonies and the Chinese empire, when Balmis arrived at Macao and Canton; he there succeeded in introducing fresh and active vaccine matter, by the means already pointed out. The English had been unfortunate in the many attempts they had made by bringing portions of matter in the vessels of the India company, which always proved inert.

After having extended vaccination in Canton as much as possible, under the political regulations of that empire, and leaving its propagation to the physicians of the English factory in that place, Balmis returned to Macao and embarked for Lisbon, where he arrived on the 15th August last, having in his way touched at St. Helena; he in that island as in other places, by his persuasions and perseverance induced the English to adopt this wonderful antidote which they had undervalued during eight years, notwithstanding it was a discovery made in their own country, and that Jenner himself had transmitted it to them.

That part of the expedition which was destined for Peru, under the direction of Salvani, was wrecked in one of the mouths of the river Madelaine; but being quickly succoured by the natives, the magistrates of the neighbourhood and the governor of Carthagena, they saved the sub-director, three physicians who accompanied him, and the children, with the fluid in a proper state, which they successfully spread in that port and province. From thence they transmitted it to the Isthmus of Panama, and undertaking the troublesome navigation of the river Madelaine, they passed the time necessary on its respective banks; they penetrated separately into the country to fulfil their commission in the towns of Teneriffe, &c. &c.; in the valley of Cucuta, and in the city of Pampelona and other populous places, till they rejoined each other at St. Fee. They gave full information to the medical men wherever they went, and laid down regulations agreeably to the instructions of the director, in order to preserve the vaccine virus, which from the account of the viceroy, they communicated to 50,000 persons without one unpleasant accident. Towards the end of March, 1805, they prepared to continue their journey, taking different and separate routs, to pass with more expedition and facility through the other towns of the viceroy-ship, situated in the road to Popayan, Cuenca, and Quito, and so on to Lima; and in the following August they arrived at Guayaquil. This expedition not only succeeded in propagating vaccination throughout countries adverse as well as friendly; but, in the dominions

of the king, they aſſured to poſterity, the perpetuity of the bleſſing, by the eſtabliſhment of the central ſocieties, and alſo by the diſcovery made by Dr. Balmis of the exiſtence of the cow-pox in the valley of Atlixco, near the city of the Puebla of the angels, and in the neighbourhood of the city of Valladolid de Mechoacan, where it was diſcovered by the aſſiſtant Dr. Anthonio de Gutierrez, and in the diſtrict of Calabozo in the province of Carfacas, where it was found by Dr. Carlos de Pozo, a phyſician eſtabliſhed there.

A multitude of obſervations (which will be ſpeedily publiſhed) on the means of extending vaccination in various climates, and on its efficacy, not only to preſerve from the natural ſmall-pox, but alſo at the ſame time to cure other diſorders; will ſtrongly manifeſt *the importance to humanity of an expedition which is without example in hiſtory.* Although the ſole object of it was to communicate and perpetuate this great bleſſing; yet the director omitted no means to render the expedition uſeful to ſcience and to agriculture. He brought a conſiderable collection of exotic plants; he cauſed drawings to be made of the moſt intereſting objects of natural hiſtory, and collected important facts and data; and amongſt the titles which give him a claim on the gratitude *of his* country, it is not one of the leaſt, that he has brought a valuable collection of live fruit-trees and other uſeful productions, which being propagated in correſponding climates in the (Spaniſh) peninſula, will render this expedition as famous in the annals of agriculture as in thoſe of medicine and humanity. It is hoped that the ſub-director and his three companions deſtined to Peru, to confer the ſame bleſſing, will not long delay their return by Buenos Ayres, after having completed their journey through that viceroy-ſhip, that of Lima, and the diſtricts of Chili and Charcas; and thus they will bring the collections and obſervations which they may have been able to acquire in compliance with the recommendations of the director, without ſuffering their attention to be withdrawn from the philanthropic miſſion with which they were ſo beneficently entruſted by his Majeſty for the benefit of the human race.

MEDICAL AND PHILOSOPHICAL REGISTER.

FOREIGN AND DOMESTIC.

Medical Graduation in the Univerſity of Pennſylvania.

AT a commencement held in the Univerſity of Pennſylvania, on the 21ſt of April, 1806, the following gentlemen were admitted to the honour of Doctor of Medicine; having previouſly defended the theſes upon the ſubjects, mentioned with their reſpective names.

1. William P. Dewees, of Pennſylvania, on the means of leſſening pain, and facilitating certain caſes of difficult parturition.

2. Robert M. Cunningham, of ditto, on the inflammatory bilious fever, as it appeared in the vicinity of Lancaſter, in the ſummer and autumn of 1804.

3. John Henry M'Farlane, of ditto, on angina pectoris.

4. Edwin L. M'Call, of Georgia, on the mutual ſubſervience of the different parts of the body, *and the power of one part to perform the function of another.*

5. Benjamin W. Dudley, of Kentucky, a ſketch of the medical topography of Lexington and its vicinity.

6. John Floyd, of ditto, an experimental inquiry into the medical properties of the magnolia tripetala, and magnolia acuminata.

7. Richard Willmott Hall, of Maryland, on the uſe of electricity in medicine.

8. William J. Selby, of ditto, on the analogy between plants and animals.

9. Lewis Creager, of ditto, on dyſentery.

10. Daniel Newcomb, of New-Hampſhire, on the different theories, that have been advanced on the ſubject of the proximate cauſe of conception in the human female.

11. Samuel Tucker, of New Jerſey, on the medical effects of bodily labour, in chronic diſeaſes, and in debility.

12. Enoch A. Green, of ditto, on the lumbricus terreſtris.

13. Joſeph Bloodgood, of New York, on hæmoptyſis.

14. John Hart, of North Carolina, on ſenſation and motion.

15. William H. Simmons, of South Carolina, on ſome of the effects of contuſions of the head.

16. Daniel D. Oyley, of ditto, on the glands, termed Veſiculæ Seminales.

17. Samuel Matthews, of Virginia, on the effects of muſic, in curing and palliating diſeaſes.

18. Charles Cocke, of ditto, an attempt to prove the identity of gout and rheumatiſm.

19. Devereux J. Claiborne, of ditto, on the uſe of artificial drains in the prevention and cure of diſeaſe.

20. Wright Tucker, jun. of ditto, on the operation of cold.

21. Jacob David Wacker, of Swabia, on hydrocephalus internus.

Obſervations on the Effect of Madder Root on the Bones of Animals. By Mr. B. Gibson. *From the Memoirs of the Literary and Philoſophical Society of Mancheſter. Vol.* 1, *ſecond ſeries.*

THERE is, perhaps, no phenomenon, which occurs in an animal body more curious, than the tinge communicated to the bones of living animals, whoſe food has been mixed with madder root. This, like many other facts, to which no reaſoning *à priori* could have directed us, was diſcovered by chance. Mr. Belcher, dining with a calico-printer on a leg of freſh pork, was ſurpriſed that the bones, inſtead of poſſeſſing their uſual whiteneſs, were of a deep red colour; and on inquiring the cauſe of it, was informed, that the pig had been fed upon the refuſe of the dyer's vats, and had received ſo much of the colouring matter of madder into the ſyſtem, that its bones were dyed by it. So intereſting a fact has attracted very much the attention of anatomiſts, and has been uſed in many phyſiological and pathological inquiries; it may not therefore be unintereſting to give a ſhort hiſtory of the phenomena connected with it, and the purpoſes to which it has been applied, previous to entering upon the more immediate object of this paper.

Many experiments have been made to aſcertain how long a time is required to produce the tinge, and whether it be permanent or only temporary. Belcher and Morand, about the ſame time, mixed madder root with the food of chickens and young pigeons. The reſult of their obſervations was, that the tinge was more quickly communicated to the bones of growing animals, than to the bones of animals which had already completed their growth; the bones of young pigeons being tinged of a roſe-colour in twenty-four hours, and of a deep ſcarlet in three days; whilſt the bones of adult animals only exhibited a roſe colour in fifteen days. They found the tinge moſt in-

tenſe in the ſolid parts of thoſe bones, which were neareſt to the centre of circulation; whilſt in bones of equal ſolidity, at a greater diſtance from the heart, the tint was more faint. The dye was deep in proportion to the length of time the madder had been continued, and when it was diſcontinued, the colour gradually became more and more faint till it entirely diſappeared. According to the experiments of theſe gentlemen, other vegetable dyes, ſuch as Logwood, Turmeric and Alkanet Root, did not communicate their reſpective tints to the bones.*

This effect of madder upon the bones, was ſoon afterwards made uſe of by Du Hamel, in his attempt to prove the manner in which the bones of animals are increaſed in thickneſs.—Obſerving in the vegetable kingdom, that the bark, by a ſort of ſecretion, formed the ligneous part of a tree, in ſucceſſive layers; ſo he conceived that the perioſteum, or membrane ſurrounding bones, being converted into oſſeous matter, increaſed their diameter by adding to them concentric laminæ in ſucceſſion. In order to prove the juſtneſs of his opinion, he mixed the food of a cock with madder root for a month, withheld it for a month, and then gave it again. He afterwards killed the animal, and upon inſpection thought he obſerved the appearance, which he expected; viz. two layers of red bone incloſing one of white, correſponding to the periods of the madder's being given or withheld.

* From ſome experiments I (Mr. Gibſon) made on young pigeons, I found that a conſiderable quantity of logwood, in the form of extract, communicated an evidently purple tint to the bones. With regard to tumeric it appears to be altered in its colour by paſſing through the digeſtive organs, for the fæces of the animals, who took it inconſiderable quantity, were conſtantly green: whilſt either logwood or madder root exhibited their reſpective hues after paſſing through the inteſtines. Saffron exhibits properties different from any of theſe ſubſtances; for though a pigeon took it in conſiderable quantity and thereby had its fæces tinged, yet no perceptible alteration of colour was produced in its bones.

This experiment, and ſome others related by Du Hamel, appear to be concluſive in favour of the theory, which he wiſhed to eſtabliſh; and as they were conducted by a phyſiologiſt of high character, the accuracy of the obſervations could not have been doubted, had theſe experiments ſtood alone. But when they are compared with ſome of his own previous experiments, and thoſe of other authors, it is difficult to reconcile them. In ſome of Du Hamel's experiments, for inſtance, the bones of a cock were tinged of a roſe-colour through their whole ſubſtance in ſixteen days, and thoſe of young pigeons of a deep ſcarlet in three days. In ſeveral experiments I have made on the ſubject, I have found the bones of young pigeons tinged of a uniform roſe-colour, internally as well as externally, in twenty-four hours. This communication of colour to the whole ſubſtance of the oſſeous ſyſtem in ſo ſhort a time, makes it highly improbable that the laminated appearance, remarked by Du Hamel, was produced by the new formation of red and white oſſeous layers, correſponding to the times (months) the madder had been given or withheld. For, as Mr. John Bell very juſtly remarks,* "If a bone ſhould increaſe by layers thick enough to be viſible and of a diſtinct tint, and ſuch layers be continually accumulated, upon each other every week, what kind of bone ſhould this grow to?" The only way in which we can reconcile with each other the phenomena obſerved in the different experiments, and account for their apparent contradiction, is, by ſuppoſing, that Du Hamel miſtook for an obſcurely laminated appearance, the variety in the tint, which is more deeply communicated to the more ſolid, and more faintly to the leſs compact parts of a bone.

This property of madder of tinging the bones of animals, has lately been employed by Dr. M'Donald,† in his ingenious

* Anatomy of the bones, &c p. 15.

† Diſputatio inauguralis de Necroſi ac Callo. 1799.

reſearches into the formation and death of bones.——Amongſt other objects he attempted to aſcertain, in what manner and how ſoon, a cylindrical bone is regenerated to ſupply the place of one artificially killed. As the proceſs is highly curious, I ſhall briefly relate the principal points.

Dr. M'Donald's experiments were made by amputating the proper leg-bone of young pigeons or chickens immediately above the joint. The marrow was then extracted, and the cavity, which contained it, filled with lint. This proceſs cauſed the death of the bone, and the formation of a new bone ſurrounding that deſtroyed, enſued. Immediately after the experiment, the animal had its food mixed with madder root, and the part was inſpected in different animals, at different periods.

On examination three days afterwards, the perioſteum or enveloping membrane, was found much thickened; and underneath it a gelatinous humour was effuſed, ſurrounding the dead bone, and ſpotted with red oſſeous nuclei; proving that the regeneration of the bone had commenced at this early period.

In ſeven days the new bone was found ſoft and flexible, not to be diſtinguiſhed from cartilage or griſtle, except by the red tint the madder had communicated to it; yet the bone deſtroyed was not at all coloured, although the other bones of the animal had acquired a bright red. From this time the new bone continued to increaſe in hardneſs, ſurrounding the old one like a ſheath. The latter in about three weeks was ſo looſe as to be drawn out, and in about fifteen days from this time, the cavity of the regenerated bone was filled with marrow and in every reſpect performed the office of that, for which it was a ſubſtitute. This may be conſidered as a general outline

of the progreſſive changes, which take place during the regeneration of a cylindrical bone, in a young animal, ſuch as a pigeon, or chicken; and the ſame proceſs is frequently performed in the human body, when, from ſome internal cauſe, the life of a bone is deſtroyed. Theſe changes involve many intereſting particulars; but the circumſtance moſt immediately connected with the ſubject of this paper is, that although the ſhaft of the bone required three weeks for its renewal, yet in ſeven days the oſſeous ſyſtem generally had acquired a bright red. Now if we explain this change in colour according to the common opinion of abſorption of the white, and depoſition of the red oſſeous matter,* we muſt neceſſarily draw this concluſion; that the oſſeous ſyſtem of the animal will be renewed three times during the period, which the formation of the ſubſtitute bone requires; a concluſion which we ſhould be inclined to reject merely from its improbability. But beſides this, the appearance of the parts ſtrongly militate againſt it—for, if we may judge at all of the activity of the proceſs in the two parts, by their comparative degrees of vaſcularity, that employed in forming the ſubſtitute bone far exceeds that going on in the oſſeous ſyſtem generally; one ſtriking phenomenon attending the regeneration of a bone being, the very high degree of increaſed vaſcularity, which the parts employed in the proceſs rapidly aſſume.

After this effect of madder upon the bones was known, it long remained a myſtery, why ſome other white parts of the

* The common opinion of phyſiologiſts, with regard to this curious fact, is, that when a bone becomes red, during the exhibition of madder root, the white oſſeous particles which compoſed it, have been entirely removed by abſorption and replaced by new oſſeous matter of a red colour: and when a bone aſſumes its natural colour, theſe red particles have been removed and replaced by white. If this be the fact, it neceſſarily follows, that an animal has at leaſt fifty-two new ſets of bones in a year: for the oſſeous ſyſtem, according to the experiments of the moſt reſpectable phyſiologiſts, acquires a deep red tint from madder in one week, and aſſumes its natural colour in another.

body, ſuch as nerves, cartilages and perioſteum, were not equally liable to be coloured by it, as the bones. This fact I believe, did not receive any explanation, until Dr. Rutherford gave a very ingenious and ſatisfactory one. When ſpeaking of this property of madder, he ſays,* "We have, in the fact before us, a beautiful example of a particular caſe of chemical attraction; ſuch as in numberleſs inſtances, is obſerved to take place, between the colouring particles of both animal and vegetable ſubſtances, and various other bodies, eſpecially earths and earthy ſalts, and oxydes of metals. So ſtrong is the affinity of the colouring matter to theſe bodies, that it is frequently obſerved to quit the menſtruum, in which it may chance to be diſſolved, to unite with them: they, in conſequence of its union, acquiring a particular tinge, whilſt the menſtruum is proportionably deprived of colour.——From this principle, this mutual attraction, is deduced the various uſe of thoſe bodies as mordents, as they are called, intermedia, or means for fixing the colours in dying or ſtaining thread or cloth, whether it be compoſed of animal or vegetable materials. Upon the ſame principle depends the preparation of thoſe pigments, known to painters under the name of lakes; theſe are truly precipitates of the colouring matter, in combination with various mordents, as their baſis.—The colouring of the bones of a living animal by means of madder, is, in every circumſtance, analogous to the formation of theſe lakes. The colouring matter of madder, paſſing unaltered through the digeſtive organs of the animal, enters the general maſs of fluids, and is diſſolved in the ſerum of the blood, to which, indeed, if it be in large proportion, it communicates a ſenſibly red tinge. *But there is always preſent in the blood, and in a ſtate of ſolution in the ſerum, a*

* See Dr. Blake's inaugural Diſſertation: De dentium formatione. p. 119.—1798.

quantity of the earthy matter of the bones, phoſphate of lime, ready to be depoſited, as the exigencies of the animal may require.—Now the phoſphate of lime is an excellent mordent to madder and has a ſtrong affinity to it, and is conſequently admirably fitted to afford a baſe for the colouring matter of it ; in ſuch experiments, therefore, they concrete in the ſtate of a bright red lake, whence the colour of the bones is derived. That this is actually the caſe, may be ſhewn by a variety of experiments. Thus, if to an infuſion of madder in diſtilled water, be added a little of the muriate of lime, no change is perceived : but if to this mixture be added a ſolution of the phoſphate of ſoda, immediately a double elective attraction takes place. The muriatic acid combining with the ſoda, remains ſuſpended, or diſſolved in the water; whilſt the phoſphoric acid, thus deprived of its ſoda, combines with the lime, which the muriatic acid parted with, and forms phoſphate of lime or earth of bones. This ſubſtance, however, being inſoluble in water falls to the bottom ; but having combined at the inſtant of its formation, with the colouring matter of the madder, they fall down united into a crimſon lake; preciſely of the ſame tint with that of the bones of young animals, which have been fed with madder. From this ſimple repreſentation of the matter, we have a ready explication of every circumſtance, which has been remarked as extraordinary reſpecting this ſubject."

Whilſt Dr. Rutherford thus gives a moſt ſatisfactory explanation of the colour of madder being communicated to the bones alone, of all the white parts of an animal ; we find that he embraces the ſame opinion, as other phyſiologiſts ; that the oſſeous materials acquire their colour previous to their depoſition, whilſt in a ſtate of ſolution or mixture in the blood ; from whence they are afterwards depoſited, and concrete in the form of a bright lake. In no part of his ingenious remarks does he hint at the probability, that the bones, already formed in an

animal, may, during the uſe of madder, become red, and after its diſuſe gradually reſume their natural colour, by the agency of a power entirely independent of their depoſition and abſorption; that this is probable I ſhall now proceed to prove.

Before it was diſcovered that madder poſſeſſed this property of tinging bones, phyſiologiſts had long been of opinion, that the various parts of the body, being worn out by the performance of their actions and functions, were gradually removed, and replaced by new materials. They had ſeen, as Mr. J. Bell obſerves, the whole oſſeous ſyſtem by the morbid removal of its ſolid part, rendered ſo ſoft and flexible as to bend under the common weight of the body and ordinary action of parts; the regeneration of many bones which had been deſtroyed by diſeaſe; the rapid abſorption of fat in ſome diſeaſes, and its ſpeedy reproduction; and laſtly, the gradual change which the fluids of the body undergo, as well as ſome of its inſenſible parts, the hair and nails; hence they ſuppoſed that the ſame proceſs of change and renovation went on in every organ, and that the bodies of animals were not compoſed of the ſame identical particles, of which they would conſiſt at ſome future period. This proceſs, which was before but conjectural, or ſupported by analogy, phyſiologiſts conſidered as fully proved by the effects of madder upon the bones. They had by this means an opportunity of ſeeing the bones altered in colour, from the ſlighteſt tint to the deepeſt red; they could obſerve this gradually removed, until the bones had regained their natural whiteneſs; and explaining the whole proceſs on the principle of depoſition and abſorption, they conſidered it as ocular demonſtration of a moſt rapid change in the conſtituent elements of a part, of which, from its ſolidity, they could ſcarcely have believed it ſuſceptible.

I apprehend, however, that it is by giving an erroneous explanation of the phenomena; by ſuppoſing that a change in the

oſſeous particles is denoted by an alteration in their colour, that phyſiologiſts have conſidered this fact as concluſive. However indubitable and well ſupported may be the opinion, which attributes an imperceptible change to the various parts of the body, we ſhall, I believe, diſcover upon a more cloſe examination, that it is by no means ſupported by the appearances, which the bones diſplay on the exhibition of madder root. The rapid change in their particles, which ſuch appearances indicate, when explained in the common way, is completely at variance with all the proceſſes performed by the bones, both in their healthy and diſeaſed ſtates. Thus we find the formation of the oſſific matter, called Callus, for the union of fractured bones; or the exfoliation of a part of a bone, are proceſſes requiring a conſiderable length of time for their performance. In Dr. M'Donald's experiments, the formation of a regenerated bone required nearly ſix weeks; but during the ſame ſpace of time, the bones of the ſame animal would be renewed ſeveral times, if the common explanation of the communication and diſappearance of the tinge of madder were well founded. From theſe circumſtances, I am led to believe, that the appearances produced by the exhibition of madder, require another mode of explanation. That which I have to offer is not liable to the ſame objections, and is ſtrongly ſupported by comparative experiments.

It was obſerved by Du Hamel, in his experiments, that the bones of animals, which had been deeply tinged by madder, by long expoſure to air loſt their colour and became white. It was this fact which ſuggeſted to me a ſimple explanation of the proceſs. It occurred to me, that if any one of the component parts of the blood naturally exerted a ſtronger attraction for the colouring matter of madder, than the phoſphate of lime, it might be deprived of the tint by a chemical power. In order to prove this, as far as I could by experiment, I took one dram of the phoſphate of lime tinged, as in Dr. Ruther-

ford's experiment, and expoſed it for half an hour to the action of two ounces of freſh ſerum, at the temperature of 98 degrees. By this operation, the ſerum gradually acquired a red tinge, whilſt the phoſphate of lime, was proportionably deprived of colour. In a comparative experiment, a ſimilar quantity of tinged phoſphate of lime, was expoſed to the action of diſtilled water under ſimilar circumſtances; but no change took place. The knowledge of this ſtrong affinity, in the ſerum for colouring matter, affords an eaſy and ſimple explanation of the effects of madder on the bones, upon the principle of chemical attraction.

Thus when an animal has madder mixed with its food, the blood becomes highly charged with it, and imparts the ſuperabundant colouring matter to the phoſphate of lime, contained in the bones already formed; as it circulates through them and moiſtens them throughout. But as ſoon as an animal has ceaſed to receive the madder, and the blood is freed from the colouring matter by the excretions, the ſerum then exerts its ſuperior attraction, and by degrees entirely abſtracts it from the phoſphate of lime, and the bones reſume their natural whiteneſs. In ſhort, the bones are at one time dyed by the colouring matter, at another time bleached by the ſerum.

Whilſt I have attempted to explain the probable manner in which the bones, *already formed* in an animal, at one time receive, and at another are deprived of the colouring matter of madder; I by no means intend to aſſert, that the phoſphate of lime does not acquire a ſimilar colour during its ſolution in the ſerum, or at the time it is precipitated from it to enter into the compoſition of the bones; the fact is indiſputable. I have, however, found from ſome experiments lately made upon a hen during oviparation, that only a ſlight tinge can be communicated to the ſhell, formed whilſt a large quantity of colouring matter is circulating with the blood. So ſlight indeed is the

bluſh, that it would not be ſeen by a common obſerver, unleſs contraſted with a natural egg: which is probably the reaſon why it has, I believe, been denied by phyſiologiſts, that the ſhell of the egg is altered by the exhibition of madder. If this may be conſidered as a teſt of the quantity of colouring matter, which the phoſphate attracts at the time it is ſeparated from the blood, it forms another ſtrong argument againſt the theory, which Dr. Rutherford, and all preceding phyſiologiſts have adopted; for, conſiſtent with this fact, the bones ſhould never exhibit more than a ſlight bluſh. When explained upon the principle of chemical attraction, we ſee that the phenomena, exhibited by the bones of an animal, by giving or withholding madder root, give no ſupport to the opinion that the various parts of the body continually undergo an imperceptible change; and I conſider it a fortunate circumſtance for that doctrine, that ſo ſimple an explanation of the effect of madder can be given. For whilſt ſo ſuſpicious a fact has been conſidered, by the higheſt authorities, as complete proof of the imperceptible renovation of parts; the rapid change in the conſtituent elements of the bones, which the communication and diſappearance of the colour indicates, muſt have appeared aſtoniſhing to every phyſiologiſt. Of this I cannot give you a ſtronger inſtance than in the words of Mr. J. Bell.* "Nothing," ſays he, "can be more curious than this continual renovation and change of parts even in the hardeſt bones. We are accuſtomed to ſay of the whole body, that it is daily changed; that the older particles are removed, and new ones ſupply their place; that the body is not now the ſame individual body, that it was; but it could not be eaſily believed that we ſpeak only by gueſs concerning the ſofter parts, which we know for certain of the bones.—When madder is given to animals, withheld for ſome time and then given again, the colour appears in their

* Anatomy of bones, &c. p. 13.

bones, is removed, and appears again with ſuch a ſudden change as proves a rapidity of depoſition and abſorption exceeding all likelihood or belief; all the bones are tinged in twenty-four hours; in two or three days their colour is very deep, and if the madder be left off but for a few days, the red colour is entirely removed."

Although by this chemical explanation of the effect of madder upon the bones, the doctrine of the imperceptible change in the component parts of animal bodies, loſes the ſupport of a fact, which has, ſince its diſcovery, been univerſally conſidered as its ſtrongeſt proof; nevertheleſs, indiſputable arguments, derived from different ſources, ſtill place that doctrine amongſt the beſt ſupported opinions in phyſiology.

Obſervations on the Effects of Dr. Fowler's *Mineral Solution in Lepra and other Diſeaſes; by* Thomas Girdlestone, M. D. *Phyſician at Yarmouth, (Great Britain). From the London Med. and Phys. Journal.*

Sir,

ALTHOUGH I had frequently uſed, with ſucceſs, the arſeniate of potaſh in meſenteric and many other ſcrofulous affections, yet your old acquaintance Mr. B. was the firſt patient on whom I tried the effects of this medicine in lepra. You remember that he had laboured for fourteen years under that diſeaſe, tried repeated ſalivations, many phyſicians, and every quack medicine, without any effect, and was at laſt cured by ſmall and repeated doſes of the arſeniate of potaſh. It is now ſeveral years ſince his cure was completed, and my experi-

ments and ſucceſs have extended to ſome hundreds of caſes of lepra, lichen, prurigo, pſoriaſis, tinea capitis, &c. &c.

My ſecond caſe of lepra proved very inſtructive to me. The patient had tried different phyſicians and quack medicines, with but little palliation of ſymptoms. After three doſes of eight drops, in twenty-four hours a lobſter redneſs came over the whole ſkin, and his face exhibited the commencement of an eryſipelatous inflammation. I deſired him to take ſome ſenna tea to relieve his bowels, and to wait till this redneſs ſhould ſubſide, and to begin with the ſolution in doſes of half the number of drops. In about two days he was able to reſume his medicine, and under the diminiſhed doſes, his diſeaſe gradually diſappeared.

The termination of my third caſe proved equally inſtructive; for on the diſappearance of the lepra, there came upon the nates large biles, which gradually dried up, and went away.

I afterwards found that the declination of cutaneous diſeaſes from this medicine, was marked ſometimes by an increaſe of the eruption, ſometimes by large biles, or fiſſures about the feet, toes, hands or fingers. One patient who had laboured for two years under a large patch of the lepra nigricans on his cheek, which had reſiſted the efforts of different practitioners, was ordered by me four drops of the ſolutio mineralis twice a day. But the firſt doſe produced the lobſter redneſs of the ſkin, a diſtention of the abdomen, and ſlight ſickneſs. He was relieved by a grain of calomel, and his lepra was afterwards cured by two drops of the ſolution, taken twice a day for ſix weeks. On a ſlight return of the diſeaſe, he reſumed the medicine in a doſe of four drops, which produced the ſame unpleaſant effects as when he tried it before in that doſe; but he

ſucceeded in his cure by the uſe of two drops twice a day, without any inconveniency.

The largeſt doſes which I ever gave of this medicine were twelve drops three times in a day; but I afterwards found that half that doſe would equally ſoon ſucceed in moſt caſes. The inſipidity of the ſolution, by itſelf, having tempted ſome to proceed beyond the doſes which I had directed, I ſoon found it neceſſary to combine this medicine, with an equal portion of tincture of caſcarilla, gentian, or cinnamon, and to caution, in the moſt particular manner, the patient from increaſing the drops beyond a certain number. For though I have ſometimes ſucceeded, in a few days, in leſſening the ſeverity of cutaneous diſeaſes, yet my experience has taught me not to look for a cure with any doſe in leſs than ſix or ſeven weeks. A gentleman, in a diſtant county, was given by a ſurgeon twenty drops of the ſolutio mineralis three times a day, for more than three months, before his lepra was taken away. The doſes appear to me to have been far too large, as it had eſtabliſhed a weakneſs on his bowels, and did not take away his lepra ſo ſoon, by four or five weeks, as the ſmaller doſes of this medicine generally do. This gentleman was afterwards troubled with nervous ſymptoms and giddineſs of the head, which had reſiſted the efforts of two phyſicians in the country, and four in London, before he became my patient. Small doſes of calomel and opium, and of ferrum ammoniacum, varied according to ſymptoms, and perſiſted in for ſome weeks, took away the diarrhœa, giddineſs, and nervous feelings, and re-eſtabliſhed his health.

I have ſtated the worſt ſymptoms which have ariſen from this medicine, under my own directions; but that ſickneſs, pain of the abdomen, naſal hemorrhage, cough, icteric ſymptoms, and dropſy, may be induced by it, I have too many opportunities of obſerving from the ſolution unfortunately having

become a very common medicine with unprofeſſional people, in curing the intermittents of children.

I ſaw one child who loſt his nails, hair, and part of his ſkin from this ſolution, which a lady had given him in improper doſes.

From all that I have obſerved of the abuſe of the arſenical ſolution, I am inclined to attribute the cough, when it ariſes, to the effects of this medicine on the liver. Too large doſes of it generally give an icteric colour to the urine; and calomel, with or without opium, I have found the beſt antidote.

In thoſe unfortunate venereal caſes, where mercury at firſt relieves, and very ſoon after aggravates the ulcerations, I have ſeen the arſenical ſolution, with ſmall doſes of opium, prevent the extenſion of the ulcers, where the nitric acid, muriate of lime, ſarſaparilla, and other boaſted remedies had no power. Under the obſervation of a cautious practitioner, mercury and arſenic may be made alternately* to aſſiſt each other in the cure of many diſeaſes. So far from arſenic inducing conſumption, when adminiſtered in proper doſes, I can produce the evidence of the remains of a conſumptive family, who owe their exiſtence, for theſe laſt ſeven or eight years, to the arſenic, which Dr. Beddoes gave them. One of the ſiſters had died in this county, and the other at Briſtol; and the reſt were labouring under the ſame ſort of meſenteric affections, as preceded the ſymptoms of phthiſis pulmonalis of thoſe who died, when Dr. Beddoes *gave* the arſenical ſolution, and reſtored them to health.

* By *alternately*, in the above ſentence, I mean, not that each medicine ſhould be given by turns, through the ſame days; but that when one medicine has been tried for ſome days or weeks, the other may be ſubſtituted, and perſiſted in, till the firſt may again become neceſſary.

Though I have generally ſucceeded in curing many cutaneous diſeaſes, and moſt caſes of lepra, yet in ſome the diſeaſe has returned. It has, however, generally returned in a ſlighter degree, and yielded to a ſimilar courſe of treatment. I have invariably found the truth of Dr. Falconer's remark, that the lepra is firſt brought on by the ſudden application of cold to the body when it is in a heated ſtate. And to the ſame cauſe, I believe, may be traced many of the relapſes. The cautions which I think neceſſary in the adminiſtration of the arſeniate of potaſh are theſe.

To begin with it always in the ſmalleſt doſes, and never to increaſe the doſe beyond five or ſix drops three times a day; and to perſiſt only in ſuch doſes as can be taken without any inconveniency. In children, the doſe ſhould only be from one to two, three, or four drops, once or twice in a day.

The ſafeſt method of giving this medicine is in drops; and in order to prevent it from becoming a common and conſequently a diſgraced medicine, it is neceſſary to combine it with an equal portion of ſome harmleſs tincture, as of caſcarilla, gentian, or cinnamon, &c. and the drops may be ordered to be taken in a decoction of ſarſaparilla or mixture with tincture of cardamoms, or any other ſpicy tincture.

In cutaneous diſeaſes ſome patients are too coſtive, and ſome are too much inclined to purge. The arſenical ſolution alone is ſometimes ſufficient to regulate the bowels; where that is not the caſe ſome addition may be neceſſary. To the coſtive, calomel may become neceſſary. To thoſe whoſe bowels are too much relaxed, the fourth of a grain of opium, or leſs, given once, twice, or thrice in a day, may aſſiſt the ſolution.

Where the itching of the ſkin is ſo very troubleſome, hydrarg. muriat. diſſolved in aqua roſæ, or aqua calcis, will

often afford relief. And in the prurigo ſenilis, or herpes ſenilis, the waſhing the ſkin every night and morning with warm water, and the ſtrict attention to an anti-dyſpeptic diet greatly aſſiſt the medicine.

I have for ſome time uſed the ſolutio mineralis in caſes of tape-worm. That this medicine, with the uſe of purgatives, brings away larger portions than any purgative medicine does without it, my preſent experience leads me to believe. And I have found the ſolutio mineralis a moſt powerful deſtroyer of the aſcaris lumbricoides. It requires ſo many months to be ſatisfied that the tape-worm is killed, that a longer time muſt paſs away before I am able fully to appreciate the powers of arſenic over this diſeaſe. But as the tænia oſculis marginalibus appears to be an indigenous diſeaſe, in and about Yarmouth, I have a good opportunity of extending my experiments. My ſervants once found this worm in a rabbit, and once in an eel; in dogs it is very common. We have lakes about Yarmouth, but I find as many of the inhabitants who uſe pump water, as thoſe who uſe the water of the open wells, labour under this diſeaſe.

I am, &c.

THOMAS GIRDLESTONE.

Yarmouth, Feb. 20, 1806.

Vegetable Galvaniſm.

THE fact ſeems to have received confirmation, that the Galvanic principle, like *caloric*, is contained in every thing throughout nature, and, like caloric alſo, is generally ſo diſ-

poſed, that, any two ſubſtances being brought into contact, it paſſes from one to the other, ſo as to be in equilibrium; or, in other words, the attractive forces between the Galvanic fluid and the different bodies in which it exiſts, are ſeldom equal. Accordingly, Baronio, of Milan, has lately conſtructed a pile of diſks entirely of vegetable matters, as horſe-radiſh root and beet root; by which a prepared frog was affected as uſual by a metallic pile.

Med. and Chir. Rev.

Extracts from a Review of Dr. Sutton's "*Practical Account of a Remittent Fever.*"*

THE author is particular in remarking, that the ſtate of the pulſe, or the general proſtration of ſtrength that takes place from the beginning, ought not to be conſidered as contra-indicating the uſe of the lancet; for that after bleeding, the pulſe, from being ſmall, feeble, and intermitting, often became full and regular; with equal relief to the debility and proſtration of ſtrength.

In ſome caſes, the pain in the thorax and the general uneaſineſs appeared to be increaſed after bleeding; but this was aſcribable to the patient being rouſed from a ſtate of torpor and inſenſibility to the oppoſite ſtate, and therefore, ſo far

* Theſe extracts will ſhew, that the ideas of a *depreſſed ſtate* of the ſyſtem, ſo well underſtood in this country, are beginning to gain ground in England, where heretofore it was ridiculed and even abuſed, as evidenced by the unwarranted cenſures thrown by the Edinburgh reviewers on Dr. Jackſon ſome time paſt.

Editor.

from affording a reaſon againſt blood-letting, was an additional argument for a repetition of it.

A buffy appearance of the blood was not waited for, as a proof of the propriety of bleeding, as it was often not met with on a firſt or ſecond bleeding in the moſt inflammatory caſes, yet might ſhew itſelf on a further repetition of the operation. A ſtriking inſtance is given of the truth of this obſervation. "The firſt blood drawn from a particular patient was twenty ounces, rather tough: he was again bled the ſame day to ſixteen ounces, and the blood appeared in every reſpect natural. On this account, blood-letting was not had recourſe to for three days, during which time the ſymptoms increaſed, and became very alarming. It was now thought adviſable to bleed to thirty ounces: the blood was very buffy. The ſymptoms from this veneſection were mitigated for a ſhort time, but became very violent in the courſe of the following day, when the patient was again bled to thirty ounces, and from that time rapidly recovered."

When the tongue in fever caſes becomes brown, it is by ſome deemed an act of temerity to draw blood, as this appearance is ſuppoſed to indicate a fever of the typhus kind, and conſequently not to admit of blood-letting. The following caſes prove that this appearance ſhould not always diſſuade from the operation.

"On the fifth day of the fever, after *four veneſections*, *three* to the extent of *twelve ounces* each, and one to *fifteen ounces*, the patient was in the following ſtate: his tongue rather brown; nauſea and vomiting; ſkin very hot; delirium; breathing ſhort; pulſe 120; expreſſed himſelf free from pain. In this ſtate blood was drawn to *thirty ounces*. On the following day the report was, blood buffy; pulſe ſoft; tongue moiſt, and not ſo brown; ſkin cool; vomiting abated. The patient, in five days

after this period, was in a ſtate of convaleſcence.—In another caſe, pulſe contracted; tongue rather brown; delirium. The patient was bled to *fourteen ounces.* On the next day, the blood was tough; the delirium abated; the patient finally recovered.—In another caſe, on the fifth day of the diſeaſe, the tongue appeared brown and dry; the pulſe 120, very full; great pain in the head; breathing ſhort; ſlight cough; the patient felt faint and very debilitated upon riſing; blood was directed to be drawn to *thirty ounces.* In the courſe of a few hours the report was, blood very buffy; pulſe ſofter, but ſtill full; breathing eaſier. This patient was afterwards repeatedly bled, and recovered."

There were ſome caſes of this fever which did not ſeem to be equally benefited by blood-letting; namely, where the affection of the breaſt was of an aſthmatic or catarrhal kind, and when the diſeaſe had taken on the dyſenteric form.

The free uſe of the lancet here inculcated, in the treatment of a fever having ſo many of the eſſential characters of typhus, will, no doubt, ſtartle a great many; and ſome, poſſibly, will be induced to queſtion the authenticity of the narration. But we ſee not the leaſt foundation for a ſuſpicion of this kind, when the reſpectability of the author is conſidered; and when it is conſidered, further, that the treatment recommended was actually adopted in a public hoſpital, open, of courſe, to the inſpection of numerous obſervers, capable of detecting any inaccuracy in the reports. However ſingular the practice may appear, it is entirely in uniſon with that inculcated by Dr. Jackſon, and a few other authorities of no trifling weight.

The author himſelf ſeems to feel a difficulty in accounting for the ſucceſs reſulting from his bold practice, in a diſeaſe ſo ſtrongly reſembling typhus; and is induced to ſuppoſe that the reſemblance was apparent only, the diſeaſe in reality belong-

ing to the claſs of inflammatory fevers, with ſomewhat of a remittent form. But although the diſeaſe has been termed by the author a *remittent* fever, it has little or no analogy with the ordinary remittent fever deſcribed by authors, and appears, indeed, to be no more entitled to this denomination than almoſt any other; for no fever proceeds through its courſe without ſome degree of exacerbation and remiſſion within the ſpace of twenty-four hours. The diſeaſe appears to us to have been merely typhus complicated with more or leſs of topical inflammation of the viſcera of the thorax; a combination extremely common in cold and temperate latitudes. Whether the acceſſory affection, the topical inflammation, was the circumſtance that determined the propriety of veneſection to ſuch a liberal extent, or whether typhus itſelf, under certain circumſtances, may not admit the uſe of the lancet, we ſhall not preſume to decide. We ſee nothing monſtrous, however, in the latter ſuppoſition.

The real utility of blood-letting, in the diſeaſe here deſcribed, is ſhewn unequivocally by the following comparative ſtatement:

"In one inſtance of the occurrence of this diſeaſe, when treated as typhus, out of thirty-ſeven patients received into the hoſpital eleven died.

"In another, where the ſame treatment was purſued upon a moderated plan (that is to ſay, without preſſing the uſe of the bark, opium, wine, &c. in the early ſtage of the diſeaſe), out of ninety-two patients eighteen died.

"In another, in which the diſeaſe was treated as ſynochus, where moderate bleeding and evacuants were employed in the beginning of the diſeaſe, and the uſual remedies for typhus were afterwards reſorted to, the mortality was upon the average of three in twenty.

"By the treatment in which veneſection has been relied on as a principal remedy, the greateſt average of deaths, in any of the inſtances in which that plan of cure has been adopted, does not exceed one in twenty."

Med. and Chir. Rev.

Of the ſuppoſed Decompoſition of Muriatic Acid.

M. *BIOT*, in conjunction with ſome other members of the *French National Inſtitute*, was lately appointed to examine and repeat the experiments of M. *Pacchiani* of Florence, and Mr. *Peel* of Cambridge, who imagined they had diſcovered the component parts of the muriatic acid; a ſubſtance which, from the fruitleſſneſs of all attempts that had been before made to decompoſe it, was ſtill ranked among ſimple bodies. In a report read by M. *Biot* on the ſubject, at the *Natural Hiſtory Society* of Geneva, he aſſerts that M. *Pacchiani*, as well as the Engliſh experimenter, were deceived; and maintains that, if the experiment mentioned by theſe gentlemen is made with every precaution neceſſary to exclude the preſence of ſea ſalt, no muriatic acid will be found in the product.

Med. and Chir. Rev.

*Analyſis of Dr. James's Powder.**

M. *CADET*, an apothecary of Paris, after obſerving that the analyſis of James's Powder (here called Poudre de Gyms) publiſhed ſome years back by Dr. Pearſon, will not enable any one

* From Ann. de Chym. No. 163, tom. lxv.

to imitate this celebrated compound,* communicates a proceſs from a M. *Pulley*, a chemiſt of Naples, who aſſerts that he has perfectly analyzed the Powder, and diſcovered a method of forming it ſynthetically.

Analyſis.

1. The Powder, as procured from London, was infuſed in hot diſtilled water; the water was then ſeparated by the filter, and, being afterwards evaporated, it yielded a ſalt having all the characters of ſulphate of potaſh. This ſalt, treated with barytes, gave a precipitate of ſulphate of barytes.

2. It having been perceived, previous to the decompoſition of the ſalt by barytes, that the ſolution contained an exceſs of free potaſh; in order to aſcertain whether this potaſh did not hold a ſmall quantity of oxide of antimony in ſuſpenſion, the liquor was decanted, to ſeparate the ſulphate of barytes, and then impregnated with ſulphurated hydrogene, which immediately formed *ſulphur auratum antimonii*. The potaſh, therefore,

* Dr. Pearſon demonſtrated *James's Powder* to be a triple ſalt, compoſed of phoſphate of lime and oxide of antimony. The proceſs ſuggeſted by him for preparing it, was, as is well known, adopted by the London College, under the title of *Pulvis Antimonialis*; it is inſerted, likewiſe, in the laſt edition of the Edinburgh Pharmacopœia, under the name of *oxidum antimonii cum phoſphate calcis*. Although the *pulvis antimonialis* is in all probability eſſentially the ſame with *James's Powder*, there is certainly a conſiderable difference in regard to the doſes of the two; the former being of nearly double the ſtrength of the latter. It might be worth while, therefore, to make trial of the proceſs here recommended.

Monſieur *Cadet* expreſſes his ſuſpicion, that Dr. Pearſon *deſignedly* concealed the true compoſition of James's Powder, being unwilling to betray a ſecret of ſo much advantage to his country *(pour ne point trahir un ſecret lucratif a ſon pays)!!*

was combined with a portion of antimony at the *minimum* of oxidation.

3. The waſhed Powder (1) was heated with nitric acid, which diſſolved the phoſphate of lime, without attacking the oxide of antimony. This oxide (which was at the *maximum* of oxidation) was ſeparated from the ſolution: ammonia was then poured into the liquor, and precipitated the phoſphate of lime.

4. The phoſphate of lime was decompoſed by weak ſulphuric acid, and afterwards re-compoſed, in order to aſcertain the proportions.

5. The *maximum* oxide of antimony was diſſolved in muriatic acid. This ſolution, treated by ſulphurated hydrogene, gave a hydro-ſulphuret of antimony, containing more ſulphur than the *kermes mineral*, and leſs than the *ſulphur auratum*.

According to this analyſis James's Powder conſiſts of

Oxide of antimony at the *maximum*	7
Phoſphate of lime	4
Sulphate of potaſh	4½
Free potaſh, holding oxide of antimony at the *minimum*	3½
	19

Syntheſis.

To recompoſe this Powder, take

Sulphuret of antimony (crude antimony)	2 parts
Calcined phoſphate of lime	1½
Nitrate of potaſh	4

Pulverize, mix, and triturate theſe ſubſtances; then heat them ſtrongly in a covered crucible. During this operation, the

oxygene of the nitric acid, combining with the ſulphur of the ſulphuret of antimony, converts it into ſulphuric acid, which, uniting with a portion of the potaſh, forms ſulphate of potaſh: the reſt of the diſengaged potaſh retains antimony oxidated at the *minimum*. The white powder which remains in the crucible is the ſame ſubſtance, M. *Cadet* ſays, as the *James's Powder*.—M. *Pulley* aſſerts that he has analyzed the powder prepared in this manner, and found it to contain the ſame principles, and in the ſame proportions, as the *James's Powder* procured from London.

Med. and Chir. Rev.

Extract of a Letter from Prince Ypſilandy, Hoſpodar of Wallachia, to Dr. De Carro, *of Vienna; on the Plague.*

"*Bucharest, July 25th,* 1804.

I RECEIVED the letter you did me the honour to write, the ſeventh of April, with the accompanying work. I have read the whole with that lively intereſt which ſcience and courage, when employed in the ſervice of humanity, never fail to inſpire. After having given ſo great an example of your confidence in the vaccine, it was well worthy the extent of your ideas, to attempt the diſcovery of a preſervative againſt one of the greateſt ſcourges on the face of the earth. But you know that I inhabit a country where it is too eaſy to make obſervations on the plague. I have ſeen this capricious diſeaſe aſſume all characters, and produce accidents of the moſt oppoſite kind. Frequently, it manifeſts itſelf under the appearance of an inflammatory fever, exhibiting at firſt all its ſymptoms; ſo that phyſicians, even of experience, have been ſtrangely deceived in preſcribing blood-letting, which produ-

ced fatal effects. Sometimes it announces itſelf from the beginning by gaſtric ſymptoms *(gaſtriciſme)*, carrying with it the ſign of a putrid leaven, which infects the whole alimentary canal, and afterwards attacks the nerves, and gives the diſeaſe the character of deſtructive malignity. Other peſtiferous patients are ſometimes ſeen with no other ſymptom than general uneaſineſs, and extreme feebleneſs in all the limbs; ſo that the phyſician is induced to conſider it as a low fever, that attacks the whole nervous ſyſtem. From this proteiform variety of ſymptoms one muſt ſuppoſe that the peſtilential miaſmata, when introduced into the maſs of fluids, become amalgamated with them, and produce ſymptoms according to the idioſyncraſy of the patient; and that therefore no ſingle remedy, nor uniform mode of treatment, whether preſervative or curative, can be applicable.

"M. *Valli*, in his journey to Buchareſt, confeſſed to me that his experiments with the vaccine taught him nothing. The idea of preſerving people from the plague by its own poiſon, promiſes ſtill leſs ſucceſs; ſince it is exceedingly common to ſee perſons who have been cured of the plague ten times, die of it the eleventh.

"Do you wiſh for an inſtance of the capriciouſneſs of this diſeaſe? take this one. The Imans exerciſe acts of charity with the moſt religious fervour. One may obſerve ſome of them, after having waſhed, wiped, and buried thouſands of peſtiferous perſons, without experiencing the leaſt accident, ſeized with it, and die at the time when they were the leaſt expoſed to the contagion. I am of opinion that the beſt thing that has yet been done with regard to this diſeaſe, is the eſtabliſhment of lazarettoes, which cannot too much engage the attention of Governments."

Med. and Chir. Rev.

Of the Nature of the Mephitic Air of Privies.

M. DUPUYTREN lately communicated an intereſting memoir to the Society of Medicine of Paris, relating to the ſuffocation of three workmen in a privy in that city. The place where the accident occurred had been emptied a few days before, without any injury to thoſe employed. Two days after, ſome workmen went down to examine the ſtate of the place, and found ſome water in it: but they ſuffered no inconvenience. After two days further, a maſon deſcended, in order to judge of the repairs that might be required: he perceived a ſtrong odour, with a greater accumulation of water; he returned, however, without having ſuffered the leaſt inconvenience, and promiſed to go down again the ſame evening. Accordingly, about nine o'clock, he went into the vault, but was inſtantly ſuffocated. A lad who was ſtanding by, obſerving the accident, went down to endeavour to draw him out, but was alſo immediately ſuffocated by the vapour. Another making a ſimilar attempt, met with a ſimilar fate. A fourth workman, as intrepid as the former, at a quarter before ten, made another effort to reſcue the unfortunate people, but immediately as he entered, began to be affected in the like manner, demanded to be drawn up inſtantly, and fell into a ſtate of ſlight aſphyxia. It was not till a quarter paſt ten o'clock that theſe unfortunate people were extricated, and that by means of hooks. One of them, the laſt that deſcended, and who had fallen with his face towards the floor of the place, was quite dead: the other two were carried to the Hotel Dieu. One of them, nineteen years of age, had entirely loſt his faculties: he ſtruggled, made ſtrong efforts to get up, and ſeemed deſirous of ſpeaking. His face was ſprinkled with cold water, alkohol, vinegar, or ammoniac diluted with water. His movements were irregular and ſpaſmodic; the abdomen was painful to the touch, and greatly ſwollen; he breathed laborioufly, with

moaning: the pulſe was ſmall and irregular. The veins of the neck and face were greatly diſtended; and the whole body was of an icy coldneſs.

The other patient, thirty-nine years of age, exhibited nearly the ſame train of ſymptoms, except that the eyes in this caſe were open, ſtaring, and fixed, and the tunica conjunctiva exceedingly red, which was not the caſe in the other. There was likewiſe no diſtention of the abdomen; the limbs were more rigid, and the pulſe was ſtronger.

A variety of remedies were adminiſtered to both, but without ſucceſs. The one died eight hours, the other eighteen hours after the accident. On opening the bodies, much ſulphurated hydrogen gas was found in the inteſtines of both of them, and a ſtrongly marked inflammation of the larynx, trachea, bronchia, and their ramifications, was obſerved. In the one that lived the longeſt, there was found, beſides, a very delicate new-formed membrane lining the aerial paſſages.

M. *Dupuytren*, determined to inveſtigate the nature of the gas which had proved ſo deſtructive in theſe caſes, boldly deſcended into the vault, when he immediately felt a ſenſe of general uneaſineſs, a pungent irritation of the eyes, pain in the head and throat, with extreme laſſitude of the limbs; nevertheleſs, he remained above half an hour, and brought with him for examination ſeveral bottles filled with the air and water of the place. The place emitted an inſupportable ſtench of ſulphurated hydrogen, and both the walls and the ſurface of the water were covered with a whitiſh cruſt, that had all the appearance of ſublimed ſulphur.

As nothing but air and water were contained in the privy at the time of the accident, it appeared probable that the water

which had drained in through the looſe walls and flooring was the cauſe which rendered the air mephitic. In order to determine this point, M. *Dupuytren*, aſſiſted by M. *Thénard*, made a ſeries of experiments, which afforded the following reſults.

The air and water were found to be equally charged with the hydro-ſulphuret of ammoniac; and as the water contained no other matters ſuſceptible of the gaſeous ſtate, it appeared probable that the aſphyxia was occaſioned by this peculiar gas. In order to convince themſelves of the truth of this ſuppoſition, various animals were ſubmitted to the action of the air taken from the place, and were almoſt inſtantly deſtroyed by it: preciſely ſimilar effects were produced by the hydro-ſulphuret of ammoniac, artificially prepared.

Deſirous afterwards of knowing what would be the effect of the elements of this gas on animal life, ſeveral animals were made to breathe, in ſucceſſion, hydrogen gas, ammoniacal gas, and ſulphurated hydrogen: the hydrogen did not prove fatal when mixed with even but a ſmall proportion of atmoſpheric air; the ammoniacal gas, in a large proportion, only acted as a powerful ſtimulant; but the compound of hydrogen and ſulphur conſtantly proved fatal to birds, when applied in the proportion of only one to a thouſand of atmoſpheric air, and to dogs and other large animals in doſes of $\frac{1}{100}$, $\frac{1}{200}$, and $\frac{1}{300}$: the ammoniac, inſtead of augmenting the deleterious qualities of the ſulphurated hydrogen, ſeemed rather, in a ſmall degree, to leſſen them.

After having determined the nature of the gas that had occaſioned the ſuffocation in theſe caſes, M. *Dupuytren* endeavoured to diſcover the beſt means of deſtroying it; this he found to be effected by the oxy-muriatic acid gas. The action of theſe two gaſes on one another is ſo rapid, that they decom-

poſe each other completely at the inſtant of coming into contact. The oxygen of the acid unites with the hydrogen of the mephitic gas, and forms with it water, while the ſulphur is precipitated; and the oxy-muriatic acid, being converted to the ſtate of ſimple muriatic acid, combines with the ammoniac, forming a ſalt which cryſtallizes on the ſides of the veſſel. A number of animals were ſubmitted to mixtures of common air, ſulphurated hydrogen, and oxy-muriatic acid, in various proportions; but were never found to be in the leaſt incommoded by them.

Not only may the deleterious effects of ſulphurated hydrogen be prevented by the oxy-muriatic acid gas, but, when they have been produced, may be often remedied by the ſame agent; for animals that had been apparently killed by the mephitic air, were recalled to life, by being made to reſpire air charged with very minute quantities of the oxy-muriatic acid gas.

M. Dupuytren adviſes, that, in the conſtruction of privies, there ſhould be two openings at the oppoſite ſides of the place, in order that a current of air may be formed when they are emptied; and he recommends, further, that a great quantity of the oxy-muriatic acid gas ſhould be diſengaged at the time, as a certain means of preventing both the danger and the noiſome ſtench that attends the operation.

Med. and Chir. Rev.

Of the Quantity of Potaſh contained in, or producible from, different Kinds of Wood.

It is found that one hundred pounds weight of wood ſufficiently dry for burning, yields only a thirtieth part of aſhes, or

℔ 3.3 ; and the aſhes afford one-fifteenth their weight of alkali. In other words, a buſhel of aſhes yields only four pounds of alkali ; but to make a buſhel of aſhes, ℔ 1800 of wood are required. Thus no more than 1-450th part of the weight of wood burnt is potaſh.

But potaſh is only afforded to this amount by the incineration of certain kinds of wood favourable to its production ; for there are other kinds of wood which yield none at all. The trees which produce moſt of this alkaline ſalt in the American foreſts, are birch, maple, baſs (tilia), oak, and hiccory. The trees which abound in gummy and reſinous matter, as the pine, cedar, and other woods of that kind, give little or no alkali. Their carbon, inſtead of concreting with the other elements into potaſh, flies off in conjunction with oxygen, or collects into lamp-black ; and ſcarcely any aſhes, or a veſtige of potaſh, is to be found.

Med. and Chir. Rev.

Method of obtaining Pruſſic Acid in a pure State.

Pruſſic acid, according to Dr. *Schauh*, a German, may be obtained in a perfectly pure ſtate, by pouring upon one part of Pruſſian blue half as much ſulphuric acid, diluted with an equal quantity of water ; and ſubſequent diſtillation. The pruſſic acid alſo paſſes over in alkohol. Its odour greatly reſembles the water of the *Lauro-ceraſus*, and, like it, is a deadly poiſon to animals. It has been proved, indeed, by the experiments of M. *Schrader*, a chemiſt and apothecary of Berlin, that this acid is actually contained in the laurel water, in the infuſion of peach leaves, in bitter almonds, and in various other vegetables ;

and it is highly probable that theſe ſubſtances owe their deleterious properties to the preſence of this acid in their compoſition.

Med. and Chir. Rev.

Solution of Sulphur in Æther.

M. FAVRE, in *Van Mons'* Journal de Chymie, has ſhewn that ſulphur is ſoluble in ſulphuric æther, by being digeſted for the ſpace of a month, in the proportion of thirty-eight grains to an ounce. Alkohol, with the aid of heat, diſſolves only twenty-three grains.

A method is thus afforded of adminiſtering ſulphur in a ſtate of extreme diviſion, and free from the abominable odour that attends it when diſſolved in oils. The ſolution in æther, it is ſaid, has neither bad taſte nor ſmell, and mixes readily with draughts. It alſo forms an excellent teſt for detecting the preſence of lead in wines. M. *Favre* mentions that he has uſed it with ſucceſs as a medicine in diſeaſes of the breaſt and ſkin.

Med. and Chir. Rev.

Extract of a Letter from DR. WILLIAM JONES *to the Editor, dated Owego Village, Tioga County (N. Y.) March 4th,* 1806.

"I HAVE lately operated upon a cow labouring under the dropſy, and drew off 20 gallons. She was unable to riſe when I firſt ſaw her, and ſhe died the fourth day after the operation: at this time I found eight or ten gallons more in the abdomen.

"I have in my poſſeſſion the ſkin of a lamb ſomething ſimilar to that mentioned in Vol. II. No. 2. of the Medical Muſeum: mine has ſeven legs (the ſkin of one of the fore legs contained the bones of two) two bodies, two tails, one neck and head:

the bodies were united at the breaſt. This lamb was yeaned laſt ſpring, and the owner of the ewe informed me that it lived about an hour, and made ſeveral attempts to get upon its feet—I did not ſee the body, and the thorax was never examined."

Extract of a Letter from a Gentleman in London to the Editor.

"We* had much converſation reſpecting what is called the yellow fever with you, and the different iſlands in the W. Indies; and the many inſtances that have occurred to have propagated it here, notwithſtanding every poſſible precaution of ſevere Quarantine, had it been contagious *ſui generis;* from all which, the Board (of Health) are confirmed that it is not contagious; but ſeem to agree with you in your late letter to me on this ſubject, that it is the higheſt grade of the Bilious fever, not communicable but in cloſe confined city atmoſpheres, and *not generated from importation*, &c. &c. &c."

CORRESPONDENCE.

Letter to the Editor, from Dr. Ffirth, *in Anſwer to a Review of his Theſis on "Malignant Fever," in the 1ſt Vol. of the Phil. Med. Muſeum.*

Madras, Sept. 14, 1805.

Sir,

I HAVE lately been favoured with a ſight of your publication, and in peruſing it, perceived that you have done me the honour of reviewing my treatiſe on malignant fever, publiſhed in 1804. I was much ſurpriſed at your obſervations, on particular parts thereof: but flatter myſelf, that, as the "Muſeum" is the vehicle for literary information, as well as the critical re-

* One of the members of the Britiſh Board of Health, and the writer of the letter.

marks of the editor, that you will give a place to my defence, and thus allow me to ſtand upon equal ground, before the public, with yourſelf.

In the firſt place, after mentioning the title of my work, &c. you obſerve, page 114, "It might have been more generally intelligible, if this gentleman had informed us in plain Engliſh, (as his aſſociates of the medical caſs have moſtly done) that he is an honorary member of the Philadelphia Medical Society." True ſir, as you ſay "it might have been," but it alſo might not have been; at all events I beg leave humbly to ſuggeſt, that it was not of much conſequence the one way or the other, as no utility could be derived from underſtanding it, and no diſadvantage accrue from not being acquainted therewith: what then was the object? What the utility of your remark? *None:* and if none, why was it made?

In page 119 of the firſt number, after mentioning the experiment of ſwallowing two ounces of black vomit, you obſerve in a note below, "this experiment, which I had an opportunity of ſeeing the author make, I muſt conſider as unneceſſary as it was diſguſting. After the proof of its harmleſs nature upon animals, it required only a very ſtrong ſtomach to extend it to the human ſubject." You are, ſir, certainly at liberty to conſider any thing you chooſe; but you undoubtedly knew, as every ſcientific phyſician muſt know, that there are certain things which affect the human body, that will not affect quadrupeds, and vice verſa. It is well known that the matter of variola, of lues, &c. &c. &c. produces diſeaſe and death in man, while it is harmleſs to other animals.

Nux vomica deſtroys dogs quickly in very ſmall doſes, yet it is a valuable tonic medicine in certain diſeaſes of man; I have uſed it to the extent of three gains, thrice a day, in intermittent

fevers, not only with impunity, but with the happy effect of curing my patients, and this in caſes were the cinchona and arſenic had failed. If given in this doſe to dogs, death would have been the conſequence. The habits, cuſtoms, conſtitutions &c. of men and quadrupeds are ſo widely different, that the proof of any ſubſtance being harmleſs to them is not ſufficient data whereon to reaſon, that it is equally inoffenſive and innoxious to man.

Many other ſubſtances could be mentioned, but it would only extend my letter, without being of any advantage to ſcience or the public, as every phyſician's obſervations will afford numerous facts on this ſubject. How could I tell *à priori* but this was the caſe with the black vomit? It might have been innoxious and mild to brutes, yet deleterious and baneful to man; though it produced no bad effects upon them, it might have induced diſeaſe and death in me: its innoxious nature could only be proved completely by this experiment; *it was therefore neceſſary, it was uſeful.*

Analogical reaſoning is always more or leſs fallacious, and never to be relied on when it is in our power to have direct: this every experimenter, this every philoſopher, will admit.

You are pleaſed to ſay the experiment was "diſguſting," as well as "unneceſſary:"—to a belle or petit-maitre, it certainly would be extremely ſo; but to a perſon anxious for the inveſtigation of truth, nothing having a tendency thereto, or in any way to elucidate the ſubject, ought to be conſidered as ſuch; every thing which has this object in view ought to be encouraged. Such reflections are of no uſe, they will neither prevent the advances of ſcience in a mind ardent in the inveſtigation of phyſical cauſes, nor will they accelerate the progreſs of the experimenter. It is my opinion, it is the opinion of the moſt learned and beſt men, that the progreſs of ſcience tends to the extenſion of human

happineſs ; every thing therefore having a relation to this, whether it be diſguſting or not, is laudable.

You obſerve, in a note to page 238 of the firſt volume, ſeveral errors in the printing of the theſes. More attention ſhould be paid, you ſay, to theſe ſmall treatiſes. True, ſir, but I can only ſay, that, in my caſe, it was not owing to want of inclination, &c. but, as you well know, to want of time : few young men are ſituated as I was in ſuch a caſe, having the care of a large, uſeful, and reſpectable inſtitution, and the buſineſs of an arduous profeſſion to attend to ; I had great inclination, but little leiſure, to pay proper attention to the printing of my theſis : therefore that errors ſhould exiſt I am not ſurpriſed, but, that ſo few are found, I am aſtoniſhed.

By our errors being ſhewn we learn in future to avoid them ; criticiſms therefore are uſeful, and I hope always to profit by judicious ones : as ſuch I conſider *only* the laſt, and for it return you my thanks ; permit me, however, to ſuggeſt to you the example of Horace, where he ſays,

> ——————Non ego paucis
> Offendar maculis, quas aut incuria fudit
> Aut humana parum cavit natura———
>
> Ars Poet. 351 v.

and to remind you that in criticiſing any work we ſhould remember the opinion of the juſtly celebrated Mr. Pope, who inſiſts that,

> Who e'er expects a faultleſs piece to ſee,
> Expects what ne'er was, is, nor e'er will be,
> In every work regard the writer's end,
> Since none can compaſs more than they intend.

In giving a quotation from the 31ſt page and 4th line of my treatiſe, you appear to have miſunderſtood my meaning, for, ſpeak-

ing of my mode of treatment, you obſerve, that "I never knew a ſtrong infuſion of tobacco when given as an enema to fail." In this caſe I alluded to the procuring an evacuation from the inteſtines, and not as you ſuppoſed to curing the diſeaſe: that it will fail in achieving a cure is certain, every perſon admits this; but if adminiſtered ſufficiently ſtrong, it will produce catharſis very generally, nay always, according to my experience: as to the injury you have ſeen it do, and the caution you recommend, I ſhall only obſerve, that in my practice I never ſaw it do harm; it certainly ought to be preſcribed judiciouſly, and with care: every phyſician muſt regulate the quantity according to the beſt of his judgment, the condition of his patient, &c. &c. To preſcribe a preciſe quantity to be uſed in every caſe, is improper; circumſtances alone can determine—I am averſe to fixed preſcriptions and doſes uſed often without proper attention to the ſtate of the ſyſtem, therefore did not mention the quantity uſed, as in few caſes was it ordered in the ſame proportion, I always accommodated it to the excitability and varying ſtate of the ſyſtem.

I am happy to hear that Dr. Keutſch has been ſucceſsful in curing the fever, incident to the Daniſh Weſt India Iſlands, by frictions with oil. I was led to employ it in the epidemics of 1802 and 1803, from conſidering the affinity of the diſeaſe to the plague, and Mr. Baldwin's having aſſerted that it was uſeful in that diſeaſe: the ſucceſs which attended my firſt trial, encouraged me to proceed, I accordingly uſed it in a number of caſes with the happieſt effect; and in the winter of 1803—4, read a memoir on the uſe of olive oil in the cure of diſeaſes, to the Philadelphia Medical Society, in which I related a number of caſes, where it, alone, was uſed ſucceſsfully in a very high grade of malignant fever.

It appears from a communication in the Philadelphia Medical and Phyſical Journal, that Dr. F. D. Meyer, of St. Thomas's, has uſed the ſame medicine with great ſucceſs in the yellow fe-

ver of that iſland. From the ſucceſs attending its uſe in the caſes related by Dr. Keutſch, in Dr. Meyer's practice, and in mine, I am induced to believe that its uſe will become more general: although, as you are pleaſed to obſerve, it is "a remedy not adapted to the purſes of the poor," if it is found as uſeful in the hands of others as in ours, and of this I have no doubt, it will be the duty of the public, a duty ſacred to humanity, to adapt the purſes of the poor to it, if, as you remark "it is not adapted to their purſes."

Believe me to be, with ſentiments of high conſideration,

Your's, &c.

S. FFIRTH.

The Editor requeſts the indulgence of the ſubſcribers to the Muſeum, for the delay attending the preſent number. This has been cauſed by a variety of circumſtances, which will not co-operate in future: The principal reaſon, however, was the deſire to terminate the printing of the American Diſpenſatory as ſpeedily as poſſible; which muſt have been delayed had the Muſeum gone to Preſs. He truſts it will hereafter appear with due regularity; and he ſolicits the aſſiſtance of the Phyſicians of America, to render the work more and more uſeful, by their frequent communications.

The preſent number will be perceived to preſent two diſtinct ſeries of pages, to the *Original Communications*, and the *Regiſter*; which, whilſt the printing of the work, is thereby facilitated will, it is conceived, render it more valuable, by retaining each part ſeparate, in the binding up the volume. This plan is purſued by the Editors of that valuable work the Medical and Chirurgical Review: and it is hoped will be approved of by the readers of the Muſeum.

☞ Any notifications of lectures for the enſuing winter, are requested to be ſent immediately to the Editor; as the next number will be put to Preſs without delay.

ERRATA.

Vol. II. p. 241 line 2, for 18 read 80.

At page 64 of the preſent No. for *had* read *hard*.

MEDICAL AND PHILOSOPHICAL REGISTER.

FOREIGN AND DOMESTIC.

A practical Treatise on the superior Efficacy and Safety of Stizolobium or Cowhage (the Dolichos Pruriens of Linnæus,) internally administered in Diseases occasioned by Worms, &c. &c. &c. By WILLIAM CHAMBERLAINE, *Member of the Royal College of Surgeons, London; &c. &c. &c.**

CHAPTER I.

GENERAL DESCRIPTION OF INTESTINAL WORMS.

ANIMATION is so bountifully bestowed through all parts of the universe, that there is scarcely any living creature that does not afford habitation and nutriment, within itself, to some other living creature.

Birds, beasts, fishes, reptiles, all have their parasites; each, certain genera, proper to itself, infesting the intestinal tube, or other parts.

Man is not exempt from this law of the creation. Living, or dead, he is the prey of worms.

* The testimonials which many medical gentlemen have given of the utility of the Stizolobium, or cowhage, in diseases occasioned by worms, have induced the Editor to introduce into the present Number, and which will be continued in the subsequent,) copious extracts from the ninth edition of Mr. Chamberlaine's treatise on this subject; that trials of its properties may here be made by our medical men.

Naturaliſts have deſcribed a great variety of worms, which have been found in different parts of the human body*; but, in this place, a general deſcription of thoſe which are moſt commonly known, and which infeſt only the alimentary canal, is all that is deemed neceſſary.

Theſe are,

1. The *Aſcaris Lumbricoides.*
2. *Tænia.*
3. *Aſcaris Vermicularis.*
4. *Trichuris.*

Aſcaris Lumbricoides. This, which is alſo called the *Teres*, or *long and round worm*, has been conſidered as a variety of the *lumbricus terreſtris*, (being mentioned by Linnæus under the name of *L. inteſtinalis*, and by Ray called *lumbricus inteſtinorum teres*,) from which, however, it evidently differs in its conformation, being entirely without the elevated ring or band, ſo conſpicuous in the middle of the common earth worm.†

This worm is from two to fifteen inches in length; and in circumference, when full grown, equal to that of a gooſe-quill. When recently excluded they are nearly tranſparent, and of a pale reddiſh colour: but ſoon after they die, that colour is changed to a light opaque yellow.

In general, theſe worms are very numerous. Dr. Hooper, of the Mary-le-bone Infirmary, ſays, he knew a girl eight years

* *Præter vermes inteſtinales, ſunt et alii,* OMNES FERE CORPORIS PARTES *incolentes, uti vermes dentales, gingivales, rhinarii, pulmonarii, cardiaci, ſanguinarii, urinarii, umbilicales; vermes in Hepate, in ſaliva, &c. Sed hi omnes non niſi in ſtatu morbido inveniuntur.* SENNERTUS.

See alſo, Baglivi, Andry, Van Doeveren, Le Clerc, profeſſor Pallas, Bloch of Berlin, Dr. Simmons, Dr. Hooper, &c.

† Memoirs of the Medical Society of London, Vol. II, p. 63.

old, who voided, per anum, upwards of two hundred in the courſe of a week; and I myſelf have very frequently ſeen in Jamaica, where, as in all the other Weſt India iſlands, this ſpecies of worm is more common, both among the whites and the negroes, than in England, as many *teretes* diſcharged at one ſtool, after the exhibition of a vermifuge purge, as would nearly fill a pint meaſure.

The *teres* is found in the ſmall inteſtines, particularly the jejunum, and ſometimes in the ſtomach. The ſtomach, however, does not appear to be their natural place of reſidence; but being irritated, they are liable to be diſlodged from thence, and not unfrequently thrown up by vomit. When theſe worms, as ſometimes it happens, make their way into the cavity of the abdomen, the caſe is mortal.

The *Tænia* or *tape-worm*, is called by Tyſon, De Haen, and others, *lumbricus latus;* and by the French, *le ver ſolitaire*, becauſe it has been ſuppoſed, though erroneouſly, there never exiſts more than one at a time in the inteſtinal canal.*

This animal conſiſts of a head placed at the ſmalleſt extremity, and a chain of articulations more or leſs broad or long, which gradually enlarge as they advance, and at length terminate in a tail formed by a rounded joint. Each of theſe joints contain their proper viſcera. Dr. Hooper† deſcribes two ſpecies of *tænia;* viz. 1. *T. Oſculis marginalibus*, or, with little apertures or mouths, on the margin or edge of each joint, very evident to the naked eye. "The oſculum is only found on one edge of a joint, and none on the oppoſite margin of the ſame

* Doctor Nitret in his letter to De Haen, Act. Med. xii. 219, mentions a woman who was ſo hungry, that ſhe was obliged to eat day and night. The reaſon was, that ſhe had EIGHTEEN *tape worms*, which were afterwards expelled.

† Memoirs of the Medical Society, Vol. V. Art. XXVII.

joint. It ſometimes happens that a joint is furniſhed with more than one oſculum; and, in general, the next joint has its oſculum ſituated on the margin of the oppoſite ſide; ſo that it alternately changes. This order, however, is ſeldom preſerved throughout the whole tract of the worm, for they are ſometimes on the ſame ſide for ſeveral joints together; but they never are ſituated on the *flattened* ſurface; hence, their being marginal is an eſſential character of this ſpecies."

"Sp. 2. *T. oſculis ſuperficialibus. Eng.* The BROAD Tape-Worm. The joints of this tape-worm are conſiderably more broad than long, and their oſcula, or apertures, are not placed on the margin, but in the middle of the flattened ſurface, and only on one ſide; this ſpecies ſeldom parts with any joints. It is very ſeldom met with in this country, but is endemic in Switzerland and Ruſſia, and very common in Germany and other parts of Europe.*"

"The joints of the *tænia oſculis marginalibus* are very eaſily ſeparated from each other, whilſt the animal is alive. Each joint, thus detached from the mother worm, has the power of retaining, for a conſiderable time, its living principle; and is called, from its reſemblance to the ſeed of the gourd, *vermis cucurbitinus*," (the GOURD WORM.)

The ſeparated joints do not appear capable of retaining their ſituation for any length of time, but are ſoon forced down the inteſtinal tube, and at length creep out, or are expelled per anum. Dr. Hooper "knew a man, who, whenever he took an eccoprotic medicine, voided upwards of forty detached joints of tænia, with his fæces; and remembers a female patient who

* Dr. Bloch, in his Inaugural Diſſertation, for which he received the prize of the Royal Society of Sciences at Copenhagen, deſcribes a worm, under the name of Ligula, which reſembles a riband, and is *without* articulations.

was always tormented by their creeping per anum, two or three hours after dining, without the exhibition of any medicine."

A caſe is related in the latter part of this work, of a ſailor, recommended to me by Dr. Thornton; and about the ſame time another occurred to me, of a bedſtead-maker, both of whom diſcharged daily, incredible quantities of tænia, in ſingle joints or divided portions, and were rendered incapable, through extreme debility, of following their reſpective occupations. Both theſe were perfectly reſtored to health by the liberal exhibition of cowhage. The formation of freſh joints is ſo rapid, that I have known ſeveral perſons who have evacuated from twenty to fifty in a day. Indeed, there are very few of thoſe who are troubled with tænia, who do not paſs off more or leſs every day.

It will be unneceſſary to follow the ingenious Dr. Hooper, in his accurate anatomical deſcription of every part of this animal; after all that has already been ſaid, it may be ſufficient to obſerve, that the head is extremely minute, not exceeding in ſize a grain of muſtard-ſeed, and that the joints neareſt the head are not more than one-eighth of an inch in breadth, and one ſixteenth of an inch in length; they continue of this ſmall ſize for about the firſt twenty or thirty joints, then gradually increaſe in length and breadth, until they arrive at their full ſize, which is from half to three quarters of an inch in length, and from one third to half an inch in breadth. The length of the worm depends on the number of joints it may conſiſt of; Boerhaave mentions his having ſeen a tape-worm thirty ells in length; and I have myſelf meaſured them, from ſixteen to twenty-five feet in length. Indeed, the exact admeaſurement of a tape-worm can never be very well aſcertained; they have the power of contracting and dilating their bodies or joints; and a tape-worm is always the longeſt when firſt diſcharged. A

Mr. Jackſon ſent to me, in order to ſhew me a tape-worm he had recently voided, in conſequence of taking large and repeated doſes of cowhage; after having for ſix weeks before, been daily diſcharging detached joints, in number from ten to twenty each day. I meaſured it, when apparently dead, and found it ſeventeen feet in length: but Mr. Jackſon aſſured me, that he had accurately meaſured it two hours before, and found it *twenty-one feet and a half.* I have ſaid, *apparently* dead, becauſe on putting it into a baſon containing ſome rectified ſpirit of wine, its motions were very ſtrong, and it continued to ſhew evident ſigns of diſtreſs for above three minutes after immerſion, and when quite dead, was contracted to at leaſt half its original length.

How great a portion ſoever of the tænia may be diſcharged, one thing it is neceſſary to impreſs upon the mind of the reader, namely, that unleſs the HEAD be alſo brought away, the worm very ſoon is regenerated, and the patient ſuffers all the ſame inconveniencies as formerly; I am convinced alſo, their generation is very rapid.

The ſame gentleman whom I juſt now mentioned, in a very few weeks after he had experienced a temporary ſuſpenſion of all his complaints, by the diſcharge of ſo large a portion as has been ſtated, was again obliged to have recourſe to the cowhage, in increaſed quantity, in conſequence of his having again began to diſcharge daily, ſingle joints, and ſometimes lengths of three, four and ſix joints; and at laſt a tape-worm, which he had no opportunity of meaſuring; but which, in the aggregate of its bulk, he ſaid, would have completely filled a half pint baſon. This was in November, 1800; and as he has remained perfectly free from complaint ever ſince, it is probable the latter tænia may have been diſcharged entire; that is to ſay, head and all.

The ſeat of the *tape-worm* is, moſt commonly, the ſmall inteſtines, the jejunum and ilium, of which it occupies ſo large a portion, as ſometimes to give a ſenſation of a large ball or weight, falling from one ſide to the other, as the patient turns in bed. But it is ſometimes found in the ſtomach. *Van Doeveren* mentions, that a Dutch peaſant, after having taken an emetic, vomited up *forty ells* of *tape-worm*, and would have got clear of more, if he had not been afraid of puking out all his guts, and for that reaſon bit the worm off.*

There are various opinions relative to the uſes of the oſcula, or little apertures or mouths, on the edge or margin of each joint.

Dr. Hooper ſays, the oſcula are believed to be viſcera ſubſervient to the propagation of the ſpecies; and that they can be proved to give exit to the ovula. This opinion is ſupported by the ingenious Mr. Carlyle.†

By ſome, *(Coulet* and *Ernſt,)* they are ſuppoſed to be the mouths by which they take in their food, and at the ſame time conſider them as excretory veſſels. *Bonnett*, in his Traité d'Inſectologie, appears to favour a ſimilar opinion, and that they alſo act as organs of reſpiration.

When we conſider the extreme minuteneſs of the head of this animal, and the minute and delicate ſtructure of the joints more immediately connected with the head, I never can reconcile it to my mind that ſo ſmall an organ can take in a ſufficient quantity of aliment for the ſuſtenance of a body of ſo much greater proportion; or, more properly ſpeaking, a CHAIN of bodies, ſometimes to the amount of ſeveral ells in length; and when,

* Van Doeveren. Diſſ. de Verm. Inteſtinor.

† Tranſactions of the Linnæan Society, Vol. II. p. 255.

added to this, we take into the account the very great difficulty there is in diſengaging the tape-worm from its hold, and the obſtinacy with which it eludes the action of even the moſt powerful medicines, is it not more probable, that theſe oſcula not only anſwer the purpoſe of mouths, through which the worm receives its aliment, but alſo of ſuckers or tenacula,* by which it is enabled to maintain its hold of the villous coat of the inteſtines, throughout its whole length?

The *Aſcaris Vermicularis*, or *maw-worm*, is, in colour, white, or of a pale-yellow; when full grown it is about half an inch in length, and in thickneſs nearly equal to a fine cambric thread, whence it is called by ſome, the *thread-worm*.

The ſeat of the aſcarides is the rectum; but they have been found in other parts. They are, in general, very numerous, occaſioning a very great itching and irritation about the verge of the anus; extremely active and quick in their motions, and not unfrequently are found creeping from the anus, externally; hence the Germans have given them the name, "AFTERWURM."

Of all the ſpecies of worms which infeſt the human inteſtines, theſe are moſt common; I am of opinion there are very few children without them. Where the conſtitution is delicate, and favourable to their production, the quantity of them capable of being nouriſhed in the inteſtines, is incredible to any but thoſe who are converſant with ſeeing them. I have known inſtances where the ſtools have appeared to be nothing elſe than myriads of aſcarides, "*all alive and leaping;*" but Mr. Werner,

* *Roſenſtein* is of the ſame opinion. "The tape-worm is the moſt difficult to expel entirely, partly on account of its length, and the many turnings, or coils of the bowels; partly on account of the power this worm is endowed with, of keeping himſelf faſt to the inteſtines with the point of his ſmaller end *(meaning the head)* and with his ſuckers between each articulation.

Roſenſtein on the Diſeaſes of Children, and their Remedies, Ch. 22.

ſurgeon to the Britiſh Factory at Algiers, ſays, that the aſcarides, and the ſymptoms cauſed by them among the inhabitants of Great Britain, are nothing in compariſon to what he has ſeen among the Algerines, with whom, by reaſon of their manner of living, they are much ſtronger, and occaſion, frequently, death itſelf.

In addition to theſe already deſcribed, we are to notice a thread-worm of a different ſpecies from the former, which, being not ſo often met with, has eſcaped the attention of moſt authors. This is called the *Trichuris*, or *long thread-worm;* and by the French *le ver a queue*, or *tailed worm;* this differs from the *aſcaris*, in having a large and ſmall extremity, whereas the *aſcaris* is pointed at both extremities. Its length is in general from one to two inches; the body, or obtuſe end, is almoſt one ſixteenth part of an inch in thickneſs; the tail is two-thirds of the whole length of the worm, as fine as a hair, and terminating in a very fine point. Dr. Hooper has given the beſt deſcription of this worm, in the Medical Journal, Vol. V. page 252, but no written deſcription can convey ſo good an idea, as can be obtained by inſpection of thoſe inimitable plates, which accompany the ingenious and elaborate account of worms, given by that gentleman in the volume alluded to.

The *Gordius*, or *Guinea-worm (vena medinenſis,)* found in the legs, and ſometimes other parts of negroes imported from Africa to the Weſt Indies, and not unfrequently, of white people alſo, who have been a long time on the coaſt of Guinea, being unconnected with the preſent ſubject, I forbear to notice it farther than merely to make mention of it.

CHAP. II.

CAUSES.

The cauſes which may be favourable to the propagation of worms are various; but how they are at firſt introduced into the ſtomach or inteſtines, or at what period, remains a matter of doubt and uncertainty; ſome will have it, that they even exiſt in the inteſtines of the infant before birth;* be that as it may, I have certainly ſeen both the round worm, and aſcarides, in children in the month; and this, and many other facts that have come to my knowledge, roundly contradict the aſſertion of ſome, which I moſt pointedly maintain to be erroneous, "that children never have worms while they live on the breaſt."

Our food is full of worms, and their ova; it is ſuppoſed by many, that all fluids, even the blood itſelf, abound with their principia; ſome will have it, that it is from theſe worms, or ova, taken in with our food, inteſtinal worms are produced; but how does this account for worms being found in the inteſtines of ſuch very young children, and even fœtuſes? Beſides, the heat of the ſtomach, and the gaſtric fluid, would ſoon deſtroy any worms taken into the ſtomach, which were not proper to the animal body; add to this, that worms which are found in the inteſtines of animals, whether of mankind, or of beaſts, birds, or fiſhes, are unlike any that are found among vegetables, in earth, or in water.†

* *Van Doèveren* Diſſ. de Verm. inteſt. *Baglivi*, Epiſt. ad Andry. *Hippocrates* (περι νουσων, L. IV. p. 511 affirmat *lumbricos latos et rotundos exiviſſe cum primo ſtercore.* *Bloch* endeavours to prove that worms are deſtined by nature to be generated, and to live in the bodies of other animals: among other arguments in favour of this opinion, he obſerves that they are found in the fœtuſes of different animals in utero; that they reſiſt the digeſtive power of the ſtomach, and that they conſtantly die when expelled from or taken out of the body. *Bloch, Abhandlung von der erzeugung der eingeweidewurmer, &c.* Sect. 2.

† Difficillimum quidem eſt explicatu, quanam ratione vermes in animantibus viventibus generantur. *Swammerdam, Hiſt. Inſect.*

It is not, however, of ſo much importance in this place, to aſcertain the origin of inteſtinal worms, as to examine what circumſtances are moſt favourable to their continuance in number, bulk, and ſtrength.

Debility of the organs of digeſtion, in an eſpecial manner, promotes the generation of worms: and a relaxed and weak ſtomach affords them a nidus, where they multiply and are nouriſhed. Hence, children are more frequently infeſted by worms than adults, becauſe of their greater moiſture; and thoſe children more than others who are of a relaxed fibre, and in whoſe chylo-poetic viſcera, digeſtion is ill performed.

Bad living, (as it is called,) that is, a long continuance of unwholeſome diet, or even of that which is wholeſome, if not in ſufficient quantity, will diſpoſe a conſtitution to worms, which was not before ſubject to them. Kidd Wake, who ſuffered five years impriſonment in Glouceſter jail, during the three firſt years of which term, he ſubſiſted upon bread and water, excepting only ſix ounces of meat twice a week, never knew he had any worms, but was always ſtrong and healthy, before his confinement; but after the two firſt years of his incarceration he began to paſs the *tænia cucurbitina* in large quantities every day; and from that to the time of his liberation, he ſuffered ſo much from the tænia, that when he came out of priſon, he was literally a mere ſkeleton. For a long time after his releaſe, the quantities of tænia which he expelled, both in ſingle joints, and in lengths of from three to ſix and ten inches, as well when he took the cowhage, as when he did not, were incredible. His conſtitution was ſo broken down, that any draſtic medicines, or ſuch as are uſually given for the expulſion of the tænia, would moſt probably have deſtroyed him; the cowhage, given in double and treble quantity, and aided by limaturæ ſtanni, liberally exhibited, has, at times,

given him conſiderable relief, but, he has never, even to this day, been completely cured.

Among the circumſtances moſt likely to ſubject the conſtitution to worms, the eating of great quantities of crude, waſhy vegetables, without a due admixture of animal food; as alſo, too great an indulgence in green and unripe fruit, may be conſidered in a prominent point of view.

Hence, in the Weſt Indies it happens, that among the negroes, whoſe diet conſiſts chiefly of vegetables,* complaints ariſing from worms are much more frequent than among white people, inſomuch that it is very rare to ſee a negro child without a ſwoln belly, and other ſymptoms of this diſeaſe.

CHAP. III.

SYMPTOMS.

There is no appearance which this complaint, in ſome conſtitutions, will not aſſume;† Doctor Dwarris, an old, and very eminent phyſician, of Kingſton (Jamaica,) uſed frequently to declare, that whenever he ſaw any uncommon and violent

* Plantanes, yams, coccos, caſſada, rice, Angola peaſe, and the maize, or Indian corn, conſtitute the principal part of the diet of negro ſlaves. The latter, of which they are remarkably fond, when juſt beginning to ripen, (in which ſtate it is uſually termed *mutton* is favourable to the multiplication of worms, more than any thing I know of. Very little animal food comes to the ſhare of a negro ſlave; and of this, only ſuch as is of the moſt indigeſtible kind; as ſalt herrings, Newfoundland ſalt fiſh, cured beef, ſalt pork, and the like.

† *Probè notandum eſt, quod nullum tam peregrinum ſit ſymptoma, tamque* Δαιμονιωδες, *quod vermes excitare non poſſint. Horrenda quidem Symptomata quandoque à vermibus exoriuntur, ut non rarò ex incantatione produci vulgo credantur.* Baglivi.

See alſo, *Werner* in Memoirs of the Medical Society of London, Vol. III. Appendix, page 591.

ſymptoms, not immediately to be accounted for, and which ſuperſtitious or ignorant people would be apt to attribute to witchcraft, he would, without heſitation, exhibit anthelmintics, and that in ninety-nine caſes out of an hundred, he found himſelf right in his conjectures.

In general, it is not difficult to know when a patient is troubled with worms. A hard ſwelled belly, diſagreeable breath, a particular heavineſs, or languid, livid look, about the eyes; a ſwelling and paleneſs of the lips, and eſpecially the upper lip; an enlargement of the noſtrils; itching of the noſe, and ſometimes a particular whiteneſs of it; pale, thin, crude urine, and in ſome inſtances, the urine perfectly white; a troubleſome itching about the anus (eſpecially from aſcarides,) ſlow fever, with a pulſe ſometimes hard, ſometimes weak and quick, but always unequal; obſtinate coſtiveneſs, or elſe diarrhœa; appetite irregular; ſometimes loathing all manner of food, at other times uncommonly voracious, are almoſt always concomitant and unerring ſymptoms of this diſeaſe.

Beſides theſe, the face will be ſometimes pale, at other times *crimſoned* over with an univerſal flushing.

To theſe ſymptoms ſucceed mucous ſtools,* teneſmus; ſudden griping pains in the ſtomach and inteſtines; a ſhort, dry cough; vomiting, ſtartings during the time of ſleep, and grinding the teeth; prolapſus ani;† ophthalmia;‡ great thirſt; fre-

* From the irritation of the inteſtines, their periſtaltic motion will be increaſed, and the ſecretion of the mucus will conſequently be in larger quantity.

† Underwood.

‡ *Ophthalmia.* I was ignorant that worms could be the occaſion of ophthalmia, until, in 1787, Mr. Wathen placed a young lady under my care, who came up from Cambridgeſhire for his advice, on account of a very obſtinate ophthalmia,

quent pains in the ſide; ſudden loſs of ſenſes, with ſtupidity, and a liſtleſſneſs and want of inclination to ſtir or take exercise;* in not a few inſtances, loſs of ſpeech.† When the

which had baffled every endeavour of the moſt eminent medical gentlemen to conquer it. The irritability was ſo great, that ſhe could not bear the ſmalleſt ray of light, coming even through a pin-hole in the window ſhutter. At firſt I ſuppoſed there muſt have been ſome miſtake, as I could not conceive a reaſon why Mr. Wathen ſhould ſend a patient from himſelf to *me* to be cured of ophthalmia, until it was explained to me that that gentleman ſuſpected the cauſe of the young lady's malady to be worms, and that, after having ineffectually tried other means to remove it, he wiſhed her to make trial of the cowhage, which in a ſhort time was attended with very happy conſequences.

Mr. Ware alſo notices the frequency of ophthalmia ariſing from the ſame cauſe.

" In conſequence of the cloſe ſympathy between the eyes and the bowels, when " the latter are loaded with ſlimy fæces, they not only prove a nidus for worms " of various ſorts, but occaſion, not unfrequently, among other ſymptoms, an in- " flammation of the eyes. From this circumſtance, the ophthalmy in children is " ſometimes incurable, until active remedies are adminiſtered, thoroughly to " cleanſe the primæ viæ. But it ſhould be remembered, that the object in admi- " niſtering ſuch remedies is to evacuate the morbid contents of the ſtomach and " bowels, and not to debilitate the general ſyſtem. WARE, *on Ophthalmy, Pſo-* " *rophthalmy, and Purulent Eye, note* 7, *page* 45.

* It is aſtoniſhing how firmly worms adhere to the coats of the ſtomach, or inteſtines, much like leeches; from whence they draw their nouriſhment by continual ſuction, which in the large worms, when in great quantity, muſt prove a conſiderable loſs to the human body, by defeating the nutrition of the body, cauſing great waſte, languor, fevers, and many other bad conſequences; often occaſioning violent cutting, piercing pains, and conſumption of fleſh.

ROWLEY *on Nervous Diſeaſes*, page 168.

† A healthy boy, aged eleven, loſt ſuddenly the power of ſpeech, and was affected with ſpaſmodic conſtriction in the muſcles of his neck and back. For theſe complaints he took anthelmintics, antiſpaſmodics, and tonics, which brought away fifteen worms, but in five weeks left him ſpeechleſs. *Hoffmann* being conſulted, preſcribed bitter purgatives and more powerful anthelmintics, which ſoon reſtored the uſe of ſpeech. *Sauvages* mentions a boy, who having paſſed, by the uſe of anthelmintics, thirty large worms, in twenty days, recovered his ſpeech which he had loſt. *Townſhend's Elements of Therapeutics.* Genus CII. Sect. 2. Mutitas.

diſeaſe is farther advanced, the mucous ſtools increaſe; cold ſweats come on; convulſions, epileptic fits, palpitation of the heart, frequent faintings, hectic fever, hiccup, apoplexy,* and finally, death itſelf.

After all that has been ſaid, it is poſſible that a patient may labour under almoſt every one of the ſymptoms enumerated in the foregoing deſcription, without having a ſingle worm of any ſort!

The *hydrocephalus*, either *externus* or *internus*, vernacularly denominated the *watery head*, or *dropſy of the brain*, exhibits a variety of ſymptoms ſimilar to thoſe occaſioned by worms; ſuch as, ſhort diſturbed ſleep; ſtartings, grinding of the teeth in ſleep; greedineſs of taking food; circumſcribed fluſhing of the cheeks; ſickneſs; picking of the noſe; and the urine often depoſiting a ſediment of a light conſiſtence and whitiſh colour: in ſhort, there are ſo many ſymptoms appear, which are common to worm-caſes, dentition, and other irritating cauſes, that, as the great and good Dr. Fothergill obſerves, it is difficult to fix upon any which ſhall particularly characterize this diſeaſe.†

Perhaps the difference of arterial action in the one, and the other diſeaſe, may tend to point out, with other concomitant ſymptoms, the difference between the two. In *hydrocephalus internus*, and that denominated by Dr. Rowley, *hydrocephalus membranarum*, the irregularity of the pulſe is very ſtriking; the rapidity of the pulſe, beating from 100 to 150 at different times of the day, may be contraſted with its ſlowneſs at intervals,

* *Apoplexia Verminoſa.* Apoplexy has ariſen from worms.
ROWLEY *on Nervous Diſeaſes*, page 486.

† The pathognomonics of hydrocephalus internus, are in children, laſſitude, ſlight pyrexia, pain in the head, a ſluggiſh pulſe, drowſineſs, and dilated pupils. *Townſhend's Elements of Therapeutics. Genus* XXV. *Hydroceph. intern.*

the pulſations being ſometimes not more than from 80 to 96; whereas, in worm complaints, although the arterial action may be increaſed, the pulſe is regular.

The pains in the limbs, inceſſant head-ach, a ſickneſs, with frequent vomiting, in which that action is not attended with pain, but the food is thrown up, plentifully, eaſily, and without ſtraining; a ſtrabiſmus or ſquinting, and at other times the brow contracted into a diſagreeable, and, as it were, angry frown, without any apparent provocation; and in the more advanced ſtages, dilatation or immobility of the iris; impatience of any but a horizontal poſture; the frequent application of the hand to the forehead, an almoſt continual drowſineſs, and coſtiveneſs ſcarcely to be removed, may alſo in ſome meaſure, tend to diſcriminate the hydrocephalus from other complaints. It is true, many of theſe ſymptoms above enumerated, may ariſe from other cauſes than water in the brain; but in other diſeaſes they do not ſo uniformly attend, nor continue ſo long. In fact, nothing but frequent opportunities of ſeeing both complaints can enable a practitioner to judge accurately, which of the two the patient labours under; and even with theſe advantages, the beſt judges may be miſtaken. Dr. Fothergill acknowledges, that he met with two or three inſtances, in patients that had very ſtrong appearances of being entered into the laſt ſtage of *hydrocephalus internus*, but were happily recovered. They were actual worm-caſes, and were cured by anthelmintics. The doctor had been led, from the appearances that were ſimilar to thoſe which attend the *hydrocephalus*, to conclude it was that diſeaſe, and to form an unfavourable prognoſtic.*

What tends more to deceive, and render it difficult to diſcriminate the one diſeaſe from the other, is, that it ſometimes happens, that in the laſt ſtage of *hydrocephalus*, as in many other

* Lettſom's Edition of Fothergill's Works, 4to. page 270.

diſeaſes, when the patient is going to die, worms are diſcharged. I do not find that any author has taken notice of this circumſtance, except my reſpected friend and ſchool-fellow, Dr. Charles William Quin, of Dublin,* whoſe Diſſertation on Hydrocephalus internus, I know not whether to admire moſt for the beauty of its language, or the accuracy with which the ſymptoms of this dreadful diſeaſe are deſcribed.

There is alſo another diſeaſe incidental to children, which, from its appearances may not unfrequently be miſtaken for a worm complaint. It is cauſed by an obſtruction of the meſenteric glands, and is called *tabes meſenterica*, and by others the *meſenteric fever*. It moſt commonly makes its appearance in children from the age of two to four years; but in ſcrophulous habits, ſhews itſelf until the eighth or tenth year; or even beyond that period, when the conſtitution is highly ſcrophulous; a fever, either remitting, or intermitting, hardneſs of the belly, irregular appetite, irregular ſtate of the bowels, paleneſs of countenance, or elſe a circumſcribed redneſs of the cheeks, as in hectic patients; proſtration of ſtrength, and an emaciated ſtate of the body and limbs, are the ſymptoms moſt commonly attendant on *tabes meſenterica*. Seeing then, that in other diſeaſes, ſo many ſymptoms ariſe, ſimilar to thoſe which are occaſioned by worms, it is abſolutely impoſſible to ſay, to a poſitive certainty, that a patient labouring under even the greater number of the ſymptoms laid down, has worms; the only diagnoſtic ſign then, which can poſſibly enable us to aſcertain, without fear of being miſtaken, their preſence, is, THE SEEING WORMS,

* Nonnunquam tamen, hic temporis vermes inferius dejiciuntur.
QUIN, *Diſſ. Inaug. de Hydrocephalo interno.*

OR PARTS OF WORMS DISCHARGED,* either downwards, or by the mouth; and when we ſee them thus expelled, we may be ſure there are more. Monro, however, regards a dilated pupil as diagnoſtic of worms, and ſays, if it cannot be conſidered as a pathognomonic ſign, it may be looked on nevertheleſs as an excellent diagnoſtic.

All the foregoing ſymptoms may be accounted for as ariſing from one or other of theſe three cauſes:

I. The debility, ravenous appetite, paleneſs, coſtiveneſs, hardneſs of the belly, and flatulence, are occaſioned by a deficiency of that chyle or nutriment, which ſhould go to our ſupport, but which is greedily devoured by the worms, almoſt as faſt as it can be ſecreted.

II. To matter, thrown off or diſcharged by the worms, may be referred, that peculiar ſmell of the breath ſo remarkable in ſome children; the diſcoloured appearance of the ſtools; fetid and ſour eructations, diarrhœa, &c.

III. From irritation of the inteſtines, proceed ſickneſs, vomiting, itching of the noſe, ſwelling of the upper lip, teneſmus, convulſions, St. Vitus's dance, epilepſy, catalepſy, tetanus, and all the train of evils ariſing from nervous affections.

* "The ambiguity of every ſymptom aſcribed to worms, except that of voiding "them, is well known."

Medical Eſſays, Vol. II. Art. 18.

(To be continued.)

Obſervations, Diſſections, and Experiments on the Bite of enraged Animals: by M. Rossi.*

FOUR caſes are here given of hydrophobia, or ſymptoms nearly allied to it, brought on by the bite of enraged animals.

Caſe 1. A young man was bitten by a cat in the leg; he ſuffered acute pain for ſome time, but it afterwards abated, and he became apparently well. Every method in uſe for preventing hydrophobia was employed, as the actual cautery, cauſtic alkali, bliſters, &c.; but in vain. On the forty-ninth day after the bite, the ſymptoms appeared, and the patient died with his teeth fixed in a piece of iron, which he had ſeized hold of. This cat had been rendered furious by only being confined in a room and tormented. On diſſecting the animal, the brain and cerebellum were found to be inflamed, with other ſymptoms of diſeaſe; and ſimilar appearances were obſerved on diſſecting the patient.

Caſe 2. Nothing remarkable occurred in this inſtance, except that the ear of the patient was painfully affected every night, at the very hour at which he had been bitten, during the fifty days that elapſed from the bite to the commencement of the diſeaſe. The bite was in the cheek: the ſymptoms were ſuch as occur in the ordinary forms of hydrophobia.

The third caſe affords a confirmation of the principal fact obſervable in the firſt caſe. A cow-feeder having remarked a cat often coming to ſteal the milk in his dairy, lay in wait for it, and attacked it with a hatchet. A conſiderable conteſt enſued;

*From *Mem. de l'Acad. de Turin, tom.* 6, 1801-2.

till at laſt the cat, unable to avoid an approaching blow, ſprung at the man, and ſeized him by the chin, whence there was no poſſibility of detaching it, but by cutting off its head. The patient was carried to the hoſpital, and all the uſual preventives of hydrophobia, as cauterizing, purging, bleeding, and mercurial ſalivation, applied. On the twentieth day the fatal ſymptoms made their appearance: he felt much difficulty in ſwallowing water, but this he overcame with great fortitude. The difficulty increaſed, and the wound became bad: the patient grew furious, and endeavoured to bite every one that came near him: he was bound in chains, but immediately broke them in pieces, leapt from his bed, ran up and down the hoſpital, attempting to bite all he met, till, reaching the outer door in order to eſcape, he was ſeized with a ſhivering, and fell down dead. The diſſection afforded appearances ſimilar to the others: the ramifications of nerves on the pharynx were, as uſual, very tender and eaſily broken, and the pharynx itſelf livid.

Caſe 4. is of a man bitten by an enraged cat. He ſuffered little pain, though the bite was deep, and the ſuppuration copious. He was treated as uſual, and ſeemed at length quite cured. For a month after this, he remained in perfect good health, then became weak and feveriſh, and in fifteen days died of conſumption.* On diſſection, the appearances correſponded with thoſe of the former caſes, though no unequivocal ſymptom of hydrophobia had manifeſted itſelf during life.

Theſe caſes are of great importance, in ſhewing that animals previouſly healthy become capable, when enraged or irritated, of communicating diſeaſe by their bite; a fact which, though generally credited by the vulgar, wanted the ſupport of direct evidence to eſtabliſh it ſatisfactorily.

Med. and Chir. Rev.

* Of what particular character is not ſtated.

On Plica Polonica.

Dr. *De Carro*, of Vienna, in a letter to the editors of the *Bibliotheque Britannique*, dated May 30, 1804, obſerves as follows.

"The letter of Dr. *Peſchier* on the *plica polonica*, in which he ſpeaks of the methods of cure, to which the recruiting of the army which took place among the Poloneſe made it neceſſary to have recourſe, recals to my mind a ſingular anecdote, communicated to me two years ago by Dr. *Frieze*, of Breſlaw, a well informed phyſician, and who firſt introduced the vaccine inoculation into Sileſia. There are ſome phyſicians who doubt, in oppoſition to the eſtabliſhed opinion in Poland, whether there is any danger in cutting off the hair in this diſeaſe, and promoting the cure by external remedies. The following fact, which occurred at Breſlaw, ſeems to prove that thoſe phyſicians were juſtified in their opinion. "Four years ago," ſays Dr. Frieze, "one third of the recruits of the regiments of artillery brought from South Pruſſia were attacked with *plica polonica*. An order was received from Berlin to ſend to that city all thoſe that were infected, and to take care that the diſeaſe was not communicated to others. This order was not at all to the taſte of the commanders of companies, as it would occaſion the loſs of at leaſt two hundred young ſoldiers. M. *Hænel*, ſurgeon major to the ſecond artillery regiment, became mediator in the cauſe; he made the recruits be brought on the ramparts, and ordered his ſurgeons to make a general ſhaving of them. In a little time, a pile of plicæ was accumulated, an ell and a half high; theſe trophies were then caſt into the ditch, and the heads of the men carefully waſhed with ſoap and water daily for ſome weeks: by this ſimple method, aided from time to time by a good thraſhing, thoſe

dirty Polanders were ſpeedily transformed into good ſoldiers, without having in the leaſt ſuffered by the loſs of this precious ornament of their heads."

"Knowing that the Poliſh horſes were often attacked with plica, I begged of ſeveral phyſicians and Poliſh gentlemen, with whom I had occaſion to ſpeak on this ſubject, and who all confirmed the fact, to endeavour to learn, if poſſible, whether this diſeaſe occurs in men and horſes independently of each other, or whether it is the effect of frequent contact between them in the courſe of dreſſing; and, in caſe of the latter of theſe ſuppoſitions being found true, to diſcover in which of the two, the man or the horſe, the diſeaſe originates.—Hitherto the Poloneſe have entirely neglected to inveſtigate the matter in this point of view."

Med. and Chir. Rev.

Vomiting excited by Emetic Tartar injected into the Veins.

A ſingular mode of producing vomiting, for the expulſion of ſolid food ſticking in the œſophagus, and threatening ſuffocation, has been propoſed and practiſed by one or two German practitioners, and, as is ſaid, with complete ſucceſs. Four grains of emetic tartar were diſſolved in half an ounce of warm water, and injected, by means of a ſyringe with a long tube, into the *vena mediana* of the arm. In about a minute, the patient vomited violently, and diſcharged the obſtructing ſubſtance, which before was in vain attempted to be diſlodged.

Med. and Chir. Rev.

Cure of Tinea, Itch, &c.

Dr. *Dieman*, of Amſterdam, recommends a mixture of the hyper-oxygenated muriatic acid and oil, for the cure of itch, tinea, and other cutaneous affections. Sixty drops or more of the acid may be added to an ounce of oil. The mixture ſhould be kept in the dark, as the effect of light is to diſoxygenate the acid, and reduce it to the ſtate of common muriatic acid.

Med. and Chir. Rev.

On certain obſtinate Venereal Affections.

M. *Bruguieres*, formerly ſurgeon in chief to the army of Italy, in a late number of the *Journal de Medicine* (vol. 8, p. 23), makes ſome judicious obſervations on the treatment of obſtinate venereal affections, not undeſerving of attention. The military *Hoſpital of Toulon*, the ſituation of which is low and cloſe, proved formerly little better than a tomb for moſt of the patients admitted, and eſpecially ſuch as laboured under ſyphilis; the greater number of the inflammatory venereal ſymptoms terminating in gangrene. Phymoſis and paraphymoſis were often followed by a total loſs of the penis, the mortification ſometimes ſpreading into the neighbouring parts. Gangrene alſo frequently ſeized on ulcerated buboes, ſpreading along the thigh, or the abdomen, and ſometimes deſtroying all the external parts of generation.

Struck with theſe alarming occurrences, which no art could remedy, M. *Bruguieres* viſited in 1782 the military hoſpitals of the north, for the purpoſe of obſerving whether the venereal diſorders in them were ſubject to ſimilar accidents. The con-

trary was found to be the caſe, and M. *B.* therefore juſtly attributed their occurrence at Toulon to local cauſes. In fact, when the wards of the hoſpital were raiſed, and ventilation was ſtrictly attended to, theſe gangrenes ceaſed to make their appearance—a ſtriking proof of the great importance of pure air in the treatment of diſeaſes.

M. *Bruguieres* likewiſe made ſome alterations in regard to the remedies, apparently with much advantage. In his tour to the north he had an opportunity of witneſſing the experiments of M. *Merlin*, made at the hoſpital at *Liſle*, by order of government, to aſcertain the anti-venereal properties of opium. The ſucceſs which he obſerved to follow its uſe determined him to adopt it afterwards in caſes which were found to reſiſt mercury and other remedies. He always, he remarks, uſed it with advantage in ulcerated buboes: ſometimes he ſeconded the effect of this medicine, by the application of the *lapis ſepticus* to the cicatrix of the chancre which had produced the bubo. When theſe tumours were in a ſtate of induration, and little diſpoſed to ſuppurate, he conjoined with the opium the repeated application of bliſters over the tumour. Theſe means, he obſerves, never failed him in the moſt obſtinate caſes: nor were they ever followed by any of the accidents above mentioned.

Med. and Chir. Rev.

On the Cure of Fiſtula Lacrymalis: by S. SAWREY, *Surgeon.*

Various modes of cure have been ſuggeſted, both by antient and modern ſurgeons, for this diſeaſe.—After opening the tumour, to remove the calloſity, the antients applied eſcharotics of different kinds; and when a caries of the os unguis

was detected, the actual cautery was had recourſe to. Wiſeman, in the beginning of this diſeaſe, bled and purged his patients, ordered alteratives, and applied compreſſion. If this did not ſucceed, he then opened the tumour, either by cauſtic or with the knife, and uſed medicaments of various deſcriptions, by which means, he ſays, he cured many. But this mode of treatment, generally ſpeaking, could only cure the callous ulcer, and obliterate the ſac; and in this event, what courſe would the tears take? yet he obſerves that the weeping ceaſed. According to Dionis and Garengeot, compreſſion alone often ſucceeded.

As the anatomy of the parts became better underſtood, and the cauſe of the tears flowing over the cheek aſcertained, ſurgeons began to think of opening the obſtructed duct, or of forming a new canal by perforating the bony partition into the noſe, leaving in the opening thus made a ſmall tent, for a longer or ſhorter time, to prevent its cloſing again.

The inciſion into the ſac is by ſome recommended to be oblique, by others ſemilunar. The ſac being opened, the os unguis has been perforated in many different ways. Arnaud uſed a grooved probe, and Petit an inſtrument which he calls the myrtle leaf. Lemorier inſerted the beak of his forceps, broke down and wholly deſtroyed the os unguis, introduced a bit of wax candle for thirty or forty days, and then healed the wound. St. Yves perforated with a trocar, introduced at firſt a wedge of wood covered with plaſter, and afterwards tents of lint, which he changed occaſionally.

Indeed, there ſeems almoſt an endleſs variety in the modes of cure uſed in this diſeaſe: but experience having ſhown that the new canal thus made does ſometimes fill up again, Woolhouſe recommended the inſertion of a leaden or ſilver tube, and the external wound to be healed over it. But in the hands of

Anel, a ſmall probe or ſyringe, for clearing the natural paſſages, anſwered every purpoſe.

Mr. Pott's mode of cure was, to open the canal into the noſe, if poſſible; if not, to perforate the os lacrymale with a curved trocar, introducing a tent until granulations appeared, when he ſubſtituted a piece of bougie or a leaden canula. This was continued as long as the patient could be prevailed on to ſubmit to it. Nearly the ſame mode of practice ſeems to have been generally employed ſince.

Meſſrs. Wathen and Ware, having met with frequent diſappointments, adopted Woolhouſe's mode, and introduced and left in a ſilver tube, which at firſt was attended with flattering marks of ſucceſs. However, it was ſoon found that the tube was not only apt to change its ſituation, but became filled up with inſpiſſated mucus, and of courſe was abandoned. Mr. Pott's mode, with little variation, was again had recourſe to, and I believe is now generally thought to ſucceed.

For various reaſons, I much ſuſpect there is ſome deception with regard to the alleged cures in this diſeaſe. I have minutely examined ſeveral people who have undergone the operation, in the hands of gentlemen of the greateſt dexterity in this town, and am ſorry to ſay, there was merely the appearance of a complete cure. The affected eye ſeems to be in ſimilar circumſtances with the other for a ſhort period only after the parts are healed: it ſoon begins to weep when any little unuſual ſtimulus is applied; or by walking in a ſharp wind; or when expoſed to ſmoke or other acrid vapours: and then the patients find the neceſſity of applying an handkerchief to the inner canthus of the eye, to abſorb the ſuperabundant quantity of tears. This ſhews that the new duct, which was at firſt made larger than natural, is beginning to cloſe; nor indeed does this appear an improbable conſequence, for it is no

eaſy matter at all times to keep a canal open that is formed by nature; much more difficult muſt it be to maintain one formed by art, eſpecially in ſuch an economy as our ſyſtem exhibits.

In fiſtula lacrymalis, ſo much ſtreſs is laid on the dryneſs of the noſtril as a ſymptom, that one would almoſt be perſuaded that the ſalt tears were the proper lubricating fluid for the noſe as well as the eye. In truth, the mucilaginous lympha of the noſe is furniſhed by the membrana pituitaria, which lubricates and defends that membrane, as well from the tears, as the ſharp air or other irritating cauſes. The tears flowing into the noſe through the lacrymal channels are applied to ſo ſmall a portion of the Schneiderian membrane, that it is plain they are not deſigned for the purpoſe of lubricating it; and in fact, when applied in unuſual quantity, they prove a ſtimulus to the membrane, and readily excite inflammation in it. In the ordinary ſtate of the eye, no more tears appear to be ſecreted than is juſt neceſſary for lubricating the ſurface of the eye, and to ſupply the waſte by evaporation. In this ſtate, probably, the lacrymal ſac and ducts might be diſpenſed with. It is only when the ſecretion of tears is unuſually increaſed, that a channel becomes neceſſary for carrying off the ſuperfluous quantity; a purpoſe to which the lacrymal ducts themſelves are not always equal, when the flow of tears is ſudden and large, as in weeping. It is further to be conſidered, that the diſeaſe in the lacrymal ſac is a conſtant ſource of irritation to the eye itſelf, which is thereby kept in a tender and inflamed ſtate. This occaſions a continual increaſed ſecretion of tears. But when the parts recover their healthy ſtate, and the irritation is removed, the increaſed ſecretion from the lacrymal gland diſappears alſo.

We are here led to admire the infinite wiſdom and deſign of the laws of the animal economy: there are not only general laws for ordinary purpoſes, but temporary, or, as it were, diſcretionary ones, to anſwer exiſting circumſtances. We ſee

canals obliterated and holes cloſed at a period of exiſtence, when they are no longer wanted; we ſee peculiar functions commencing at deſtined periods, and ceaſing when neceſſity no longer requires them.

About four years ago, aſſiſted by Dr. Clutterbuck, I attempted to do the operation for fiſtula lacrymalis upon a poor woman. After perforating the os unguis, and making a paſſage into the noſe, I filled up the opening with a tent of lint, intending ſoon after to introduce ſome more ſolid ſubſtance. The patient did not return for ſeveral days, when I found that the lint had got out, and the perforation from the lacrymal ſac into the noſe had cloſed. Finding that ſhe could not attend regularly, and having no intelligent perſon about her, all that appeared to be left us to do, was to attend to the diſeaſed ſac, and diſregard the future courſe of the tears. The inciſion into the ſac was filled up with dry lint, which was changed now and then. The inflammation and thickening of the ſac gradually diſappeared, the quantity of tears leſſened, and in the courſe of about two weeks the wound healed. I have ſeen her ſeveral times ſince, and there are as good ſigns of a complete cure as in thoſe inſtances which I have examined where the canal was kept open for a longer time: but no one would imagine that the opening into the noſe was preſerved in this caſe; all that appears probable is, that the ſac is obliterated, and the ſurrounding inflammation taken away. As the diſeaſe in the ſac vaniſhed, the weeping became leſs and leſs; and now (except when any unuſual irritation is preſented) the eye ſeems perfectly free from diſeaſe.

If it ſhould be found that theſe obſervations are in any wiſe founded in truth, inſtead of the painful and tedious operation of opening the ſac, perforating the *os unguis*, and obliging the patient to wear a metallic tube for months, a very ſimple and eaſy mode of cure might be ſubſtituted, attended with very lit-

tle pain or inconvenience. The ſac might be laid freely open, and occaſionally dreſſed with dry lint, until the parts coaleſced, or the cavity filled up by granulations. But no rule need be laid down: the intentions being known, each might accompliſh the end in the way he preferred.

I would not omit taking notice of another mode of cure, which comes recommended from the beſt authority, which is that of inſerting a ſilver ſtyle with a flattened and bent head, to be conſtantly worn. Mr. Ware thinks he has found it to conduct the tears into the noſe. Whether a deception ſimilar to that which I have already mentioned takes place here, I cannot ſay, as I have not had an opportunity of examining any one who was wearing it.

In all the different ways mentioned, cures are ſaid to have been effected. But it is inconceivable, that, after the uſe of corroſives, and ſtill more of the actual cautery, the parts ſhould be left in a ſituation fit to perform their functions: obliteration of the cavity ſeems to be inevitable after ſuch treatment. And when we find a ſolid ſtyle anſwering the purpoſe equally well with a hollow tube, there really appears reaſon to ſuſpect, that keeping open a communication with the noſe is not an eſſential part of the cure, and that in the greater number of caſes the cavity of the ſac is obliterated.

Med. and Chir. Rev.

On the late very mortal Fever of Gibraltar.

It is well known that two quite oppoſite opinions are entertained with reſpect to the nature of the cauſe of this fever. One party, by far the moſt numerous, maintain that the exciting cauſe is a ſpecific or peculiar contagious matter, i. e. a matter

generated in the conſtitution of perſons ill of the diſeaſe, and ſucceſſively propagated from ſuch diſeaſed perſons to others: another party, ſmall in number, but very weighty in talent and experience, maintain that the occaſional cauſe *is not contagion*, but depends upon the climate at particular ſeaſons, favoured by particular circumſtances. It is of infinite moment that this queſtion ſhould be determined, both for the ſatisfaction of the people of the United Kingdom, and as it concerns more particularly the reſidents and occaſional viſitants of the Rock of Gibraltar. The meaſures to be taken for the *cure*, but eſpecially for the *prevention* are ſo very different according to the opinions adopted, that if not the very exiſtence, at leaſt the diminution of the mortality, depends upon its determination. If it be true that the diſeaſe is *not contagious*, then the ſecluſion of perſons on board of expenſive and inconvenient floating lazarettos; the burning of beds and furniture; the deſertion of the neareſt relatives of the ſick*; the terror of being infected by intercourſe; the apprehenſion of the cauſe of the fever being imported into this and other countries; theſe and other meaſures and effects on the public mind become ſerious evils to the ſtate, and individual family calamities; to ſay nothing of the method of medical treatment.

If ſuch be the truth, and the exiſtence of contagion be diſproved, a change in the phyſical properties of the atmoſphere from hot and dry, to cold and moiſt, or ſome other change leſs obvious to the ſenſes, may be expected effectually to extinguiſh the diſeaſe, while the cure will depend upon the notion that may be adopted of the nature of the fever, as an *inflammatory one* or of the *typhus* kind. On this point, we underſtand, the ſame diverſity of opinion has ſubſiſted, as with regard to the contagious or non-contagious diſpoſition. We anxiouſly look for the

* It is a fact, that many were found dead in their beds, without an attendant.

hiſtory of the late fatal fever, from the medical gentlemen who attended in it; and we know more than one from whom the public rightfully expect complete ſatisfaction, and ſuch accounts as will in future eſtabliſh a fit and ſucceſsful mode of conduct. In the mean time, the propoſal of a prize queſtion by the king of Pruſſia, for determining "*whether or no the contagion of the yellow fever can be conveyed in ſubſtances deſtitute of life, without loſing its morbific efficacy*,"* is certainly premature; the previous queſtion, whether there is contagion or not, being hitherto undecided.

Med. and Chir. Rev.

Nickel proved to be a perfect and even noble Metal.

M. Richter, of Berlin, obtains *pure* nickel either by precipitating it from its diſſolution in nitrous acid by carbonate of potaſs, and expoſing the oxide ſo obtained to a fierce fire, without any reducing matter; or by decompoſing the triple ſalt of nickel and ſulphate of volatile alkali by potaſs, and expoſing the oxide to an intenſe fire, without any additional matter. The pure metal is formed in maſſes from the ſize of a ſmall nut to that of a millet ſeed, in a ſcoria containing the other metals, viz. copper, cobalt, and arſeniate of nickel.

Among other properties, metallic nickel has the following:

1. Its *colour* is intermediate between the whiteneſs of tin and of ſilver.
2. It is not oxidable by air and fire.
3. Its ſpecific gravity, when forged, is 8,666.
4. It is extremely ductile and malleable.
5. It is as difficult to fuſe as manganeſe.

* See Tilloch's Philoſophical Magazine, June 1805, p. 93.

6. Its oxide is reducible by fire alone.

7. Like iron, it is ſtrongly attracted by the magnet, and can aſſume polarity.

8. It is magnetic even when united to copper, but not when united to arſenic.

9. It is diſſoluble in nitro-muriatic and nitrous acid, but not in ſulphuric or muriatic.

Richter ſells it at Berlin for three Pruſſian crowns (about eleven ſhillings) a *gros* (drachm.)

Med. and Chir. Rev.

Platina and Palladium now Articles of Sale.

It will be welcome intelligence to experimenters in chemiſtry, and even to medical practitioners, that various utenſils of platina, ſuch as *crucibles*, *ſpoons* for the blowpipe, *evaporating diſhes*, *thin plates*, *wire*, weights, filings for ſolution, covers, &c. may be purchaſed, at comparatively very cheap rates, of Mr. Cary, inſtrument maker, in the Strand. For theſe articles it is underſtood the public are indebted to the reſearches of Dr. Wollaſton.

Palladium, a perfectly new ſubſtance to all the world, except a few perſons, is alſo announced for ſale, at Mr. Knight's, ironmonger, in Foſter lane, Cheapſide. We do not know whether or no a ſhop is yet opened for the ſale of utenſils made of *zinc*, but one is propoſed.

Med. and Chir. Rev.

Curious Caſe of cutaneous Affection. By T. GIRDLESTONE, M. D. *addreſſed to the Editors of the Medical and Philoſophical Journal.*

" GENTLEMEN,

About two years ago, two brothers of the name of Lambert, were ſhown to me, who came from a diſtant part of Suffolk, with a very extraordinary appearance, which came on in a few weeks after they were born, and had ever ſince remained extended over the ſkin, except on the face, palms of the hands, and ſoles of the feet, which were the only parts that were ſmooth and natural.

This deformity was a horny ſort of covering, which ſeemed moſt nearly to reſemble an innumerable body of warts of a brown colour, and cylindrical figure, riſing to an uniform height, of about half an inch, and growing as cloſe as poſſible to each other, but ſo ſtiff and elaſtic, that when the hand was drawn over them they made a ruſtling noiſe. Theſe young men ſaid, that they had a brother in the ſame manner, and their father and grandfather had the ſame ſort of ſkin; but, if I recollect rightly, that their ſiſter or ſiſters were free from this deformity. Theſe men were perfectly healthy and good looking; one was under 20, and the other not much older; but their complexions were unuſually florid. Theſe were all the particulars that a few minutes converſation with them enabled me to notice; and I did not know till I afterwards read the ſecond part of Dr. Willan's valuable work on the diſeaſes of the ſkin, that the caſe of Lambert the grand-father, and Lambert the father of theſe young men, had been ſo accurately detailed by Mr. Machin in 1731, and by Henry Baker, Eſq in 1755, in the Philoſophical Tranſactions, as quoted by Dr. Willan, Order II. iv. Ichthyoſis; or I ſhould have inquired more minutely, how far all the circumſtances which are related

by theſe gentlemen correſponded with the deformity of this third generation of Lambert.* But perhaps ſome of your readers, who reſide in the neighbourhood of theſe men, may be able to ſupply my defects on this curious caſe.

T. GIRDLESTONE, M. D."

Yarmouth, October 25, 1802.

* "An extract from the minutes of the Royal Society, March 16, 1731, containing an uncommon caſe of diſtempered ſkin, by John Machin, Sec. R. S. &c.

"A country labourer, living not far from Euſton-Hall in Suffolk, ſhewed a boy (his ſon about 14 years of age, having a cuticular diſtemper, of a different kind from any hitherto mentioned in the hiſtories of diſeaſes.

"His ſkin (if it might be ſo called) ſeemed rather like a duſky coloured thick caſe, exactly fitting every part of his body, made of a rugged bark, or hide, with briſtles in ſome places, which caſe covering the whole excepting the face, the palms of the hands, and the ſoles of the feet, cauſed an appearance as if thoſe alone were naked and the reſt clothed. It did not bleed when cut or ſcarified, being callous and inſenſible. It was ſaid he ſheds it once every year, about autumn, at which time it uſually grows to the thickneſs of three-quarters of an inch, and then is thruſt off by a new ſkin which is coming up underneath.

"It was not eaſy to think of any ſort of ſkin, or natural integument, that exactly reſembled it. Some compared it to the bark of a tree; others thought it looked like ſeal-ſkin; others like the hide of the Elephant, or the ſkin about the legs of a Rhinoceros; and ſome took it to be like a great wart, or number of warts uniting and overſpreading the whole body. The briſtly parts, which were chiefly about the belly and flanks, looked and ruſtled like the briſtles or quills of a hedge-hog, ſhorn off within an inch of the ſkin.

"His face was well featured, and of a good complexion, if not rather too ruddy; and the palms of his hands were not harder, or in worſe condition, than is uſual for workmen or labourers. His ſize was proper for his age; his body and limbs ſtraight, and, excepting as to this deformity, well ſhapen.

"This rugged covering gave him no pain or uneaſineſs, unleſs that ſometimes after hard work, it was apt to ſtart and cleave, and cauſe a bleeding: and notwithſtanding the unuſual diſpoſition of his humours to form ſo ſtrange an in-

The next chain in the hiſtory of theſe extraordinary caſes is the one above related, by Dr. Girdleſtone, ſince which they are thus noticed in the Bulletin des Sciences, Vol. 3. p. 145, at a ſitting of the Philomathic Society.

"*Remarks on two Brothers of the Race of Porcupine Men.*

"Many philoſophers have already ſpoken of this race, which has been exemplified in a family ſufficiently known,

tegument, his natural excretions were ſaid to be in the ordinary courſe and manner, without any thing remarkable attending them.

"The father knew of no accident to account for this diſtempered habit; but, ſaid that his ſkin was clear at his birth, as in other children, and ſo continued for about ſeven or eight weeks, after which, without his being ſick, it began to turn yellow, as if he had had the jaundice; from which by degrees it changed black, and in a little time afterwards thickened, and grew into that ſtate it appeared in at preſent: That he has been in health from his birth, and hath no ſickneſs at the ſeaſon when he ſheds it. He further ſaid that his mother had received no fright to his knowledge, whilſt ſhe was with child; and hath borne him many children, none of which have ever had this or any other unuſual diſtemper or deformity."

See Philoſophical Tranſactions abridged, by Reid and Gray, Vol. 6th. Supplement, p. 65. A plate, repreſenting the back of the boy's hand, accompanies the paper.

In the 49th. Vol. of the Philoſophical Tranſactions for the year 1755, we have the following account by Henry Baker, called "A ſupplement to the account of a diſtempered ſkin, &c.

After having ſtated that ſuch a boy had been exhibited to the ſociety, whoſe caſe was drawn up by Mr. Machin, Mr. Baker adds, "As more than four and twenty years are now paſt ſince this account was given, and the perſon therein mentioned is ſtill alive, and was lately ſhewn at London, by the name of the Porcupine man, with a boy in the like condition, both which I ſaw and examined; ſome farther knowledge of him, may not, I hope, be thought undeſerving the attention of the Royal Society.

"His name is Edward Lambert. He is now 40 years of age; a good-looking well-ſhaped man, of a florid countenance; and when his body and hands are covered, ſeems nothing different from other people. But except his head and

by the name of Lambert. Two brothers of this family, the males of which have the body covered with thorns and ſcales are at preſent in Paris; one aged 22, the other 14. The eldeſt has the body entirely thorny, with the exception of the head, the palms of the hands, and ſoles of the feet. The youngeſt

face, the palms of his hands and bottom of his feet, his ſkin is all over covered in the ſame manner as in the year 1731," (here we are referred to the preceding account.) "This covering ſeemed to me moſt nearly to reſemble an innumerable company of warts, of a dark-brown colour, and a cylindric figure, riſing to a like height, and growing as cloſe as poſſible to one another; but ſo ſtiff and elaſtic, that, when the hand is drawn over them, they make a ruſtling noiſe.

"When I ſaw this man, in the month of September laſt, they were ſhedding off in ſeveral places, and young ones, of a paler brown, ſucceeding in their room, which, he told me, happens annually in ſome of the autumn or winter months; and then he commonly is let blood, to prevent ſome little ſickneſs, which he elſe is ſubject to whilſt they are falling off. At other times he is incommoded by them no otherwiſe, than by the fretting out his linen, which he ſays, they do very quickly; and when they come to their full growth, being then, in many places near an inch in height, the preſſure of his clothes is troubleſome.

"He has had the ſmall-pox, and been twice ſalivated, in hopes of getting rid of this diſagreeable covering; during which diſorders the warting came off, and his ſkin appeared white and ſmooth, like that of other people; but on his recovery, ſoon became as it was before. His health at other times has been very good during his whole life.

"But the moſt extraordinary circumſtance of this man's ſtory, is, that he has had ſix children, all with the ſame rugged covering as himſelf; the firſt appearance whereof in them, as well as in him, came on in about nine weeks after the birth. Only one of them is now living, a very pretty boy, eight years of age, whom I ſaw, and examined, with his father, and who is exactly in the ſame condition.

"It appears therefore paſt all doubt, that a race of people may be propagated by this man, having ſuch rugged coats or coverings as himſelf," &c.

A plate of this boy's hand is likewiſe given, very much reſembling the former one by Mr. Machin.

is bare in ſeveral places, eſpecially on the breaſt ;—but the brown ſpots, ſufficiently evince, that he will become by age, as well covered as his brother. The thorns on the back of the hands are very large, and may be compared in diameter to Porcupine quills; but thoſe on the breaſt have a greater reſemblance to ſcales. They conſiſt of ſmall long plates, very numerous, extremely cloſe, and are placed perpendicularly in the ſkin.

This thickening of the epidermis, and of the hair, is the effect of an hereditary diſeaſe, tranſmitted from father to ſon. They reckon already five generations afflicted with it."

From experiments made upon gluten, by Charles Louis Cadet, of the College of Pharmacy, Paris, and related in a memoir in the Annales de Chimie, No. 123, the following concluſions are drawn :

1ſt. Freſh gluten is inſoluble in alcohol.

2d. It becomes ſoluble when it has undergone the acid fermentation.

3d. Alcoholic ſolution of gluten is precipitated by water.

4th. This ſolution, evaporated to the conſiſtence of ſyrup, furniſhes a varniſh which may be employed in the arts.

5th. Fermented gluten, diluted in alcohol, becomes an excipient of colouring matters, and makes them adhere to the ſmootheſt bodies.

6th. Vegetable colouring ſubſtances combine with gluten better than others.

7th. Painting, where gluten has been uſed, dries very ſoon, has no noxious odour, and may be waſhed.

8th. A very ſtrong and tenacious luting may be made with gluten and lime.

Tilloch.

Syphon.

A ſyphon has been invented by Mr. Norton, " which may be eaſily filled without the neceſſity of employing the air pump. At the bottom of the ſhorter leg is a valve opening upwards, and to the bottom of the longer leg is fitted a plug, which is put in while the ſyphon is filling at the bended part, where there are ſmall projecting tubes for giving vent to the air during the filling; the ſyphon is then plunged into the fluid, the plugs in the upper part of the ſyphon fixed in, and that in the lower part of the longer leg taken out; the fluid will begin running, and of courſe the valve at the end of the ſhorter leg will open, and the ſyphon act as in common caſes."

Monthly Magazine.

Explanation of the ſuppoſed Fact, that Rhubarb is rendered more aſtringent by roaſting.

Catechu, and other ſubſtances remarkable for their aſtringent properties are known to contain a large proportion of the principle called *tannin.* They alſo contain *gallic* acid. The former united to the ſkin affords leather. The latter, by uniting to ſulphate of iron, conſtitutes ink. It is not quite certain which of theſe, or whether both of them, are the aſtringent ingredient. It is probable that tannin is the moſt powerful, if not the only aſtringent matter; becauſe catechu is almoſt pure

tannin. It has been long known, that, by roaſting coffee berries and other ſubſtances, the tannin is compounded; and Mr. Hatchett has lately ſhewn, that any carbonaceous ſubſtance whatever, whether animal, vegetable, or mineral, will afford tannin, by due carbonization. Hence it ſeems probable, that, by roaſting rhubarb root, the tannin is augmented much above the proportion in its natural ſtate, and that, contrary to the modern received opinion, the medicine is really, in ſome reſpects, improved by the proceſs.

Med. and Chir. Rev.

On an artificial Subſtance which poſſeſſes the principal characteriſtic Properties of Tannin. *By* CHARLES HATCHETT, *Eſq.* F. R. S.

The diſcovery of the principle on which the effects of tannin eſſentially depend, may be partly attributed to Mr. Deyeux, who obtained a ſubſtance from galls which he conſidered as a ſpecies of reſin, but which was afterwards proved by Mr. Seguin to be that which renders the ſkins of animals inſoluble in water, and imputreſcible, and thus to be the principle by which they are converted into leather.

The chief characteriſtic property of this ſubſtance was aſcertained by Mr. Seguin to be that of precipitating gelatine or glue from water in a ſtate of inſolubility; and, as it was evidently different from any vegetable ſubſtance hitherto diſcovered, he gave it the name of tannin.

This diſcovery of Mr. Seguin at once unveiled the theory of the art: an eaſy and certain method was afforded by which tannin could be detected, and its relative quantity in different ſubſtances be determined, whilſt the nature and properties of

this newly diſcovered vegetable principle could be ſubjected to accurate inveſtigation.

This diſcovery has been more lately elucidated by the experiments of Mr. Biggin, Mr. Prouſt, and Mr. Davy; the latter of whom diſcovered that catechu, or *terra japonica*, conſiſts almoſt wholly of tannin. This principle is likewiſe found to exiſt ready formed in a number of other vegetable ſubſtances, as oak bark, ſumach, &c. &c. and is in theſe caſes commonly combined with gallic acid, extract, and mucilage. The experiments of Mr. Hatchett, here detailed, prove that a ſubſtance poſſeſſing the chief characteriſtic properties of tannin may be formed by very ſimple means, not only from vegetable, but from mineral and animal ſubſtances. This curious fact, ſo important in its conſequences as it may be expected to turn out, is thus announced by the ingenious author.

'In the courſe of my experiments on lac, and on ſome of the reſins, I had occaſion to notice the powerful effects produced on them by nitric acid; and I have ſince obſerved, that, by long digeſtion, almoſt every ſpecies of reſin is diſſolved, and is ſo completely changed, that water does not cauſe any precipitation; and that, by evaporation, a deep yellow viſcid ſubſtance is obtained, which is equally ſoluble in water and in alcohol, ſo that the reſinous characters are obliterated.

'When I afterwards had diſcovered a natural ſubſtance, which was compoſed partly of a reſin ſimilar to that of recent vegetables, and partly of aſphaltum, I was induced to extend the experiments already mentioned to the bitumens, in the hope of obtaining ſome characteriſtic properties by which the probable original identity of theſe bodies with vegetable ſubſtances might be farther corroborated. In this reſpect I ſucceeded, in ſome meaſure, better than I expected; but I obſerved a very material difference between the ſolutions of the reſins and thoſe

of many of the bitumens; ſuch, for inſtance, as aſphaltum and jet. The firſt effect of nitric acid, during long digeſtion with theſe ſubſtances, was to form a very dark brown ſolution, whilſt a deep yellow or orange coloured maſs was ſeparated, which by ſubſequent digeſtion in another portion of nitric acid was completely diſſolved, and by evaporation was converted into a yellow viſcid ſubſtance, equally ſoluble in water and in alcohol, ſo as to perfectly reſemble that which by ſimilar means had been obtained from the reſins, excepting that, when burned, it emitted an odour ſomewhat reſembling that of the fat oils.

'It therefore appeared to me, that the firſt or dark brown ſolution had been formed by the action of the nitric acid on the *uncombined* carbonaceous part of the bitumens, or that by which they are rendered black; and that the deep yellow portion, which was ſeparated, was that which conſtituted the real or eſſential part of theſe bituminous ſubſtances. This opinion was confirmed by ſome experiments which I purpoſely made upon amber; and having every reaſon, therefore, to believe that the dark brown ſolution obtained from aſphaltum and jet was in fact a ſolution of coal, I repeated the experiments on ſeveral varieties of the pit or mineral coal, from all which I obtained the dark brown ſolution in great abundance: but thoſe coals which contained little or no bitumen did not yield the deep yellow ſubſtance which has been mentioned.

'In each experiment I employed one hundred grains of the coal, which I digeſted in an open matraſs with one ounce of nitric acid diluted with two ounces of water. (The ſpecific gravity of the acid was 1.40.)

'After the veſſel had been placed in a ſand-bath, and as ſoon as it became warm, a conſiderable effervеſcence, attended with much nitrous gas, was produced: after about two days I commonly added a ſecond, and ſometimes a third ounce of the

acid, and continued the digeſtion during five or ſix days, or until the whole, or nearly the whole was diſſolved, excepting in thoſe caſes when the deep yellow ſubſtance was formed; for this I conſtantly ſeparated.

'The next experiment was made upon charcoal, which was more readily diſſolved than the preceding ſubſtances, without leaving any reſiduum: the ſolution was perfect, and the colour was reddiſh brown.

'Having thus, by means of nitric acid, obtained ſolutions from aſphaltum, from jet, from ſeveral of the pit coals, and from charcoal, I evaporated them to dryneſs in ſeparate veſſels, taking care in the latter part of the proceſs to evaporate very gradually, ſo as completely to expel the remainder of the acid without burning the reſiduum: this, in every caſe, proved to be a brown gloſſy ſubſtance, which exhibited a reſinous fracture.

'The chemical properties of theſe reſidua were as follow:

'1. They were ſpeedily diſſolved by cold water and by alcohol.

'2. Their flavour was highly aſtringent.

'3. Expoſed to heat, they ſmoked but little, ſwelled much, and afforded a bulky coal.

'4. Their ſolutions in water reddened litmus paper.

'5. The ſame ſolutions copiouſly precipitated the metallic ſalts, eſpecially muriate of tin, acetite of lead, and oxyſulphate of iron. The colour of theſe precipitates was commonly brown, inclining to that of chocolate, excepting the tin, which was blackiſh grey.

'6. They precipitated gold from its ſolution, in the metallic ſtate.

'7. They alſo precipitated the earthy ſalts, ſuch as the nitrates of lime, barytes, &c. &c.

'8. The fixed alkalies, as well as ammonia, when firſt added to theſe ſolutions, only deepened the colour; but after ſome hours, rendered them turbid.

'9. Glue or iſinglaſs was immediately precipitated by theſe ſolutions from water, and the precipitates were more or leſs brown according to the ſtrength of the ſolutions. The precipitates were alſo inſoluble in cold and in boiling water; ſo that in their eſſential properties they proved ſimilar to thoſe formed by the varieties of tannin hitherto known, with the difference, that this factitious ſubſtance appeared to be exempt from gallic acid, and mucilage, which commonly accompany the varieties of tannin, and which occaſion modifications in the colour and appearance of ſome of their precipitates.

'Having thus had the ſatisfaction to diſcover that a product reſembling tannin could be formed by ſuch a ſimple method, not only from vegetable but alſo from mineral coal, I was induced to examine how far the ſame might be extended to animal coal, and I therefore reduced a portion of iſinglaſs to that ſtate in a cloſe veſſel, and, having rubbed it into fine powder, I digeſted it with nitric acid in the manner which has been deſcribed. At firſt the acid did not appear to act upon it, but at length it was ſlowly diſſolved, excepting a ſmall quantity, which however, was in every reſpect unchanged; and here we may remark, that as animal coal is incinerated with much more difficulty than vegetable coal or charcoal, ſo was the ſame difference to be obſerved when oxygen was preſented to theſe bodies in the humid way.

'The ſolution reſembled thoſe which have been deſcribed, excepting that the brown colour was more intenſe. It was evaporated to dryneſs, and was then diſſolved in diſtilled water; after which the ſolution, being examined by the re-agents which had been employed in the former experiments, was

found to produce ſimilar effects, excepting ſome difference in the colour of the precipitates.

'I next added ſome of the liquid to a ſolution of iſinglaſs, and obtained a copious precipitate. Thus it is evident that a tanning ſubſtance may be formed from animal as well as from vegetable and mineral coal: and it is not a little curious, that this enables us to aſſert as a matter of fact, although not of economy, that one portion of the ſkin of an animal may be employed to convert the other into leather.

'In the courſe of theſe experiments, I alſo ſubjected coak to the action of nitric acid, and obtained a product which reſembled that which had been afforded by pit coal; but in this caſe (as might be expected) there was not any appearance of the deep yellow ſubſtance which has ſo often been mentioned.'

Theſe experiments prove, that a tanning ſubſtance may be formed by artificially expoſing carbon to the action of nitric acid: and it alſo appears, from other experiments here related, that this is beſt effected when the carbon is uncombined with any other ſubſtance excepting oxygen; for when any of the inflammable ſubſtances, as, the reſins, turpentine, wood, amber, wax, and certain kinds of coal that appear to be imperfectly carbonized, ſuch as the *Bovey* coal, were treated with nitric acid in the manner above mentioned, the tanning matter was not produced: but when, either by combuſtion or by the help of ſulphuric acid, they were converted into carbon, the tanning principle was formed.

'Since the preceding experiments were made,' Mr. Hatchett obſerves, 'I have farther proved the efficacy of this ſubſtance by actual practice, and have converted ſkin into leather by means of materials, which, to profeſſional men, muſt appear extraordinary; ſuch as, deal ſaw-duſt, aſphaltum, common

turpentine, pit coal, wax candle, and a piece of the ſame ſort of ſkin.

'Allowing, therefore, that the production of this ſubſtance muſt for the preſent be principally regarded only as a curious chemical fact not altogether unimportant; yet, as the principle on which it is founded appears to be developed, we may hope that a more economical proceſs will be diſcovered, ſo that every tanner may be enabled to prepare his leather even from the refuſe of his preſent materials.'

Med. and Chir. Rev.

*Of the State of Medicine among the Anglo-Saxons.**

Inquiries into the ſtate of medicine in rude and barbarous ages afford not merely a ſubject of curioſity, but often of utility. By comparing the diſorders of thoſe periods with the known habits and modes of life of the people, we frequently diſcover relations that enable us to aſſign the remote cauſes of diſeaſe, and conſequently facilitate the means of prevention, if not of cure. The following account of the ſtate of medicine among our Saxon anceſtors will probably be deemed not unintereſting.

"Among the diſorders which afflicted the Anglo-Saxons, we find inſtances of the ſcrophula, the gout, or foot-adl; fever, or gedrif; paralyſis, hemiplegia; ague, dyſentery, conſumption, or lungs-adl; convulſions, madneſs, blindneſs, diſeaſed head, the head-ach (heafod-ece), and tumours in various

* From a learned and ingenious work, entitled *The Hiſtory of the Manners, landed Property, Government, Laws, Poetry, Literature, Religion, and Language, of the Anglo-Saxons: by* Sharon Turner, *Eſq. F. A. S.* 8vo. publiſhed by Longman and Co. 1805.

parts. But if we conſider the charms which they had againſt diſeaſes as evidence of the exiſtence of thoſe diſeaſes, then the melancholy catalogue may be increaſed by the addition of the poccas (puſtules), ſore eyes and ears, blegen and blacan blegene (blains and boils), elffidenne (the night-mare), cyrnla (indurated glands), toth-ece, aneuriſms (wennas et mannes, heortan), and ſome others.

"Nations in their barbarous æras have uſually conſidered diſeaſes to be the inflictions of evil beings, whoſe power exceeded that of man. Adapting their practice to their theory, they have met the calamity by methods which were the beſt adapted, according to their ſyſtem, to remove them; that is, they attacked ſpells by ſpells. They oppoſed charms and exorciſms to what they believed to be the work of demoniacal incantations. The Anglo-Saxons had the ſame ſuperſtitions. Their pagan anceſtors had referred diſeaſes to ſuch cauſes, and, believing the principle, they reſorted to the ſame remedies. Hence we have in their MSS. a great variety of incantations and exorciſms againſt the diſorders which diſtreſſed them.

"When ſome of their ſtronger intellects had attained to diſcredit theſe ſuperſtitions, and eſpecially after chriſtianity opened to them a new train of aſſociations, this ſyſtem of diſeaſes originating from evil ſpirits, and of their being curable by magical phraſes, received a fatal blow. It had begun to decline before they were enlightened by any juſt medical knowledge; and the conſequence was, that they had nothing to ſubſtitute in the ſtead of charms, but the fancies and pretended experience of thoſe who arrogated knowledge on the ſubject. Before men began to take up medicine as a profeſſion, the domeſtic practice of it would of courſe fall on females, who, in in every ſtage of ſociety, aſſume the kind taſk of nurſing ſickneſs; and of theſe the aged, as the moſt experienced, would be preferred.

"But the Anglo-Saxons, ſo early as the ſeventh century, had men who made the ſcience of medicine a ſtudy, and who practiſed it as a profeſſion. It is probable that they owed this invaluable improvement to the chriſtian clergy, who not only introduced books from Rome, but who, in almoſt every monaſtery, had one brother who was conſulted as the phyſician of the place. We find phyſicians frequently mentioned in Bede; and among the letters of Boniface, there is one from an Anglo-Saxon, deſiring ſome books *de medicinalibus*. He ſays they had plenty of ſuch books in England, but that the foreign drawings in them were unknown to his countrymen, and difficult to acquire.

"We have a ſplendid inſtance of the attention they gave to medical knowledge in the Anglo-Saxon medical treatiſe deſcribed by Wanley, which he ſtates to have been written about the time of Alfred. The firſt part of it contains 88 remedies againſt various diſeaſes. The ſecond part adds 69 more; and in the third part are 76. Some lines between the ſecond and third part ſtate it to have been poſſeſſed by one Bald, and to have been written at the command of Cild. It is probably a compilation from the Latin medical writers. Wanley preſumes that Bald wrote it; but the words imply rather poſſeſſion than authorſhip.

"We find ſeveral Saxon MSS. of medical botany. There is one, a tranſlation of the Herbarium of Apuleius, with ſome good drawings of herbs and flowers, in the Cotton Library. Their remedies were uſually vegetable medicines.

"We have few hints of their ſurgical attentions, but they ſeem not to have exceeded thoſe common operations which every people, a little removed from barbariſm, cannot fail to know and uſe.

" We read of a ſkull fractured by a fall from a horſe, which the ſurgeon cloſed and bound up; of a man whoſe legs and arms were broken by a fall, which the ſurgeons cured by tight ligatures; and of a diſeaſed head, in the treatment of which the medical attendants were ſucceſsful. But we find many caſes in which their efforts were unavailing. Thus, in an inſtance of a great ſwelling on the eyelid, which grew daily, and threatened the loſs of the ſight, the ſurgeons exerted their ſkill to no purpoſe, and declared that it muſt be cut off. In a caſe of a great ſwelling, with burning heat, on the neck, where the necklace came, it was laid open to let out the noxious matter. This treatment gave the patient eaſe for two days, but on the third the pains returned, and ſhe died. Another perſon had his knee ſwelled, and the muſcles of his leg drawn up till it became a contracted limb. Medical aid is ſaid to have been exhibited in vain, till an angel adviſed wheat flour to be boiled in milk, and the limb to be poulticed with it while warm. To recover his frozen feet, a perſon put them into the bowels of a horſe.

" Veneſection was in uſe. We read of a man bled in the arm. The operation ſeems to have been done unſkilfully, for a great pain came on while bleeding, and the arm ſwelled very much. Their lancet was called œder-ſeax, or vein-knife. But their practice of phlebotomy was governed by the moſt miſchievous ſuperſtition. It was not uſed when expediency was required, but when their ſuperſtitions permitted. They marked the ſeaſons and the days on which they believed that bleeding would be fatal. Even Theodore, the monk, to whom they owed ſo much of their literature, added to their follies on this ſubject, by imparting the notion that it was dangerous to bleed when the light of the moon and the tides were increaſing. According to the rules laid down in an Anglo-Saxon M. S. the 2d, 3d, 5th, 6th, 9th, 11th, 15th, 17th, and

20th days of the month were bad days for bleeding. On the 10th, 13th, 19th, 21ſt, 23d, 24th, 25th, 26th, and 28th days, it was hurtful to bleed, except during certain hours of the day. The reſt of the month was proper for phlebotomy. They had their tales to ſupport their credulity. Thus we read of 'ſum lœce, or a phyſician, who let his horſe blood on one of theſe days, and it lay ſoon dead.'

"We will add, as a ſpecimen of their medical charms, their incantation to cure a fever.

"In nomine dni nri Jhu Xpi tera tera tera teſtis contera taberna giſe ges mande leis bois eis andies mandies moab leb lebes Dns ds adjutor ſit illi ill eax filiax artifex am."

"Two of their medicines may be added, one for the cure of conſumption, the other for the gout.

"With lungen adle."

"Take hwite hare hunan (white horehound), and yſopo (hyſſop), and rudan (rue), and galluc (ſow-bread), and briſewyrt and brunwyrt (brownwort), and wude merce (parſley), and grundeſwylian (groundſel), of each 20 pennyweights, and take one ſeſter* full of old ale, and ſeeth the herbs till the liquor be half boiled away. Drink every day faſting a neap-full cold, and in the evening as much warm.

"With fot adle (the gout)."

"Take the herb datulus or tituloſa, which we call greata crauleac (tuberoſe iſis). Take the heads of it, and dry them very much, and take thereof a pennyweight and a half, and the

* Fifteen pints.

pear tree and roman bark, and cummin, and a fourth part of laurel berries, and of the other herbs half a pennyweight of each, and ſix pepper corns, and grind all to duſt, and put two eggſhells-full of wine. This is a true leech-craft. Give it to the man to drink till he be well."

Of the Food of the Anglo-Saxons.—" Their food was that mixture of animal and vegetable diet which always attends the progreſs of civilization. They reared various ſorts of corn in incloſed and cultivated lands, and they fed domeſticated cattle for the uſes of their table.

" For their animal food they had oxen, ſheep, and great abundance of ſwine; they uſed, likewiſe, fowls, deer, goats, and hares; but though the cattle are not unfrequently mentioned in their grants and wills, and were often the ſubjects of exchange, yet the animals moſt numerouſly ſtated are the ſwine. The country in all parts abounded with wood, and woods are not often particularized without ſome notice of the ſwine which they contained: they alſo frequently appear in wills. Thūs Alfred, a nobleman, gives to his relations an hide of land, with 100 ſwine; and he directs 100 ſwine to be given for his ſoul to one miniſter, and the ſame number to another; and to his two daughters he gives 2000 ſwine. So Elfhelm gives land to St. Peter's, at Weſtminſter, on the expreſs condition that they feed 200 of theſe animals for his wife.

" They ate various kinds of fiſh; but of this deſcription of their animal food the ſpecies which is moſt profuſely noticed is the eel. They uſed eels as abundantly as ſwine. Two grants are mentioned, each yielding 1000 eels, and by another 2000 were received as an annual rent. Four thouſand eels were a yearly preſent from the monks of Ramſey to thoſe of Peterborough. We read of two places, purchaſed for 21 pounds, wherein 16000 of theſe fiſh were caught every year; and in

one charta, 20 fiſhermen are ſtated, who furniſhed, during the ſame period, 60000 eels to the monaſtery. Eel dikes are often mentioned in the boundaries of their lands."

"Horſe fleſh, which our delicacy rejects with averſion, appears to have been uſed, though it became unfaſhionable as their civilization advanced. The Penitentiale ſays, 'Horſe-fleſh is not prohibited, though many families will not buy it. But in the council held in 785, in Northumbria, before Alfwold, and in Mercia, before Offa, it was diſcountenanced.' 'Many among you eat horſes, which is not done by any chriſtians in the eaſt: avoid this.'

"But though animal food was much in uſe among our anceſtors, it was as it is with us, and perhaps will be in every country in which agriculture has become habitual, and population much increaſed, rather the food of the wealthier part of the community than of the lower orders.

"That it could not be afforded by all is clear, from the incident of a king and queen viſiting a monaſtery, and inquiring, when they ſaw the boys eating only bread, if they were allowed nothing elſe. The anſwer returned was, that the ſcanty means of the ſociety could afford no better. The queen then petitioned the king to enable them to provide additional food."

Med. and Chir. Rev.

Experiments on hammering Metals.

Some experiments have been lately made in France, ſhewing that there is a limit to the production of heat by hammering metals; a fact which is in favour of the materiality of heat.

Med. and Chir. Rev.

Quickſilver proved to be a malleable Metal.

Some experiments have been made at Hudſon's Bay, in which quickſilver, when congealed, was beat out into a plate as thin as writing paper, upon an anvil, and with a hammer of the ſame temperature as the quickſilver itſelf.

A curious experiment was made: on plunging a maſs of frozen quickſilver into a tumbler glaſs of *hot* water, the water was inſtantly frozen, the glaſs burſt into pieces, and the quickſilver became fluid.

Med. and Chir. Rev.

A manufacturer of Sheffield has not only rolled out zinc into plates, but found that at a certain temperature it is both very malleable and ductile, ſo that wire is eaſily made of it. It is propoſed alſo to have a number of kitchen utenſils in future made of zinc, or of zinc and tin, after the manner of the Chineſe. This material, it is hoped, will baniſh, or at leaſt render leſs frequent, the uſe of lead and copper for culinary veſſels.

Med. and Chir. Rev.

* Of all the objects of chemiſtry animal matters are the moſt embarraſſing to it, on account of the great complication of

* From the proceedings of the French National Inſtitute.

their elements, and becauſe the ſimpleſt agent that can be applied to them produces in them a thouſand movements and transformations, the play of which eſcapes us, and of which we judge only by the reſults. This is what takes place, for example, when theſe matters are treated with nitric acid,—a method firſt employed by Scheele and Bergman, and from which M. Berthollet obtained ſo intereſting reſults. The moſt apparent phænomenon, then, is the developement of a great quantity of azote. Thoſe next obſerved are an alteration of the acid; the production of a great deal of ammonia, of carbonic, oxalic, and malic acid; and the transformation of a part of theſe matters into tallow, and of another into a yellow bitter ſubſtance. But theſe effects vary, according to the ſtrength of the acid, the duration of its action, and the nature of the matters ſubjected to it.

Meſſrs. Fourcroy and Vauquelin, by directing their reſearches to theſe variations, and the circumſtances which attend them, have found that nitric acid applied to the muſcular fibre, that is to ſay, fleſh, transforms it by a firſt impreſſion into a yellow matter, little ſapid, little ſoluble, and yet acid; by a longer continued action, into another matter, alſo yellow and acid, but very little ſoluble and exceedingly bitter; and, in the laſt place, into a third matter, ſoluble but inflammable, and, what is very curious, detonating, not only in heat, like common gunpowder, but alſo by percuſſion.

Indigo furniſhes a ſimilar matter, and ſtill more abundantly than animal matters. Meſſrs. Hauſſman and Walther had obſerved it for ſome time. Meſſrs. Fourcroy and Vauquelin ſuppoſe it to be produced by the diſappearance of azote, and by the combination of the hydrogen and carbon of the fleſh with a ſuperabundance of oxygen furniſhed by the acid. They ſuppoſe that the yellow matter which tinges the bile, and that

which colours the ſkin and the urine during the jaundice, is produced alſo by ſome combination of oxygen with the fibrine matter of the muſcles, or with that of the blood.

Meſſrs. Fourcroy and Vauquelin have employed themſelves alſo on the analyſis of milk; and their reſearches have greatly ſimplified the theory of it. They have diſcovered that the acid which is developed in it, and which was conſidered to be of a particular nature, is nothing but the acid of vinegar modified by ſome animal ſubſtances and ſome ſalts which it holds in ſolution. Milk, according to them, muſt be conſidered as a mixed liquor conſiſting of a great deal of water and of two kinds of matters, ſome of them really diſſolved, as ſugar, mucilage, muriate and ſulphate of potaſs, and acetic acid; others merely ſuſpended, as the matter of cheeſe, that of butter, and the phoſphates of iron, lime and magneſia.

Conſidering the infinite complication of this firſt aliment of young animals, theſe gentlemen give us new motives for admiring the providence of nature, which has depoſited in it all the materials of ſpeedy growth. The caſeous ſubſtance is almoſt the ſame as that of the muſcles; the phoſphate of iron is one of the elements of the blood; and that of lime forms the earthy baſis, and is the cauſe of the hardneſs of the bones.

Theſe gentlemen alſo have made a remark which may be intereſting to medicine: it is, that the whey does not contain phoſphoric ſalts, but when it can diſſolve them in an exceſs of acid, and that it contains none when it is ſweet.

Tilloch.

Silver, ſuperior to Plumbago, for writing on Aſſes-ſkin.

Mr. Rubens Peale, of this city, has by chance diſcovered, the ſuperiority of ſilver over the common black-lead pencil, to write with, on the ſubſtance called Aſſes-ſkin. The marks are perfectly diſtinct, and are rubbed out without the ſmalleſt difficulty, with the finger. A ſmall pencil of ſilver attached to the extremity of the caſe, will anſwer very completely.

New York Medical Society.

The legiſlature of New York, on the 4th April ult. paſſed "an act to incorporate Medical Societies, for the purpoſe of regulating the practice of phyſic and ſurgery, in that ſtate."

The following gentlemen have been choſen charter officers of the Medical Society of the county of New York, according to the act of the legiſlature for their incorporation.

Preſident,	Dr. Nicholas Romayne.
Vice-Preſident,	Dr. James Tillary.
Delegate to the State Society,	The Hon. Dr. Samuel L. Mitchill.
Cenſors,	Dr. John R. B. Rodgers,
	Dr. Wright Poſt,
	Dr. William Hamerſley,
	Dr. James S. Stringham,
	Dr. David Hoſack.
Treaſurer,	Dr. Valentine Seaman.
Secretary,	Dr. Archibald Bruce.

LITERARY INTELLIGENCE.

PROPOSALS have been iſſued by Dr. F. Paſcalis of New York (late of Philadelphia) for publiſhing by ſubſcription a work in two volumes Octavo, entitled "Pyrroloimogia; or, Inquiries into the Peſtilence called Yellow Fever, containing the hiſtory of its ſymptoms and prevalence in different parts of the world; a comparative ſtatement of all controverſies reſpecting its origin, modes of propagation and treatment; with an attempt towards a new theory of the electrical phenomena and Galvanic influence, ariſing from terraqueous and putrid exhalations, which explains the cauſe of peſtilential diſeaſes, their remedies and preventives."

This work will be compriſed in two volumes Octavo, each volume containing more than 300 pages, to be delivered to Subſcribers in boards at five dollars the ſet, or handſomely bound and lettered at ſix dollars.

Dr. Shadrach Ricketſon, of New York, has now in the preſs, his work, entitled "Means of preſerving Health, and preventing Diſeaſes, &c."

It is deſigned, not merely for the faculty, but for the information of every perſon, within whoſe powers, the means of preſerving health and preventing diſeaſes, in a great meaſure conſiſt.

MEDICAL AND PHILOSOPHICAL REGISTER.

FOREIGN AND DOMESTIC.

(Continuation of Cowhage from laſt number.)

CHAP. IV.

CURE.

WHEN, from the exiſting ſymptoms, all other circumſtances conſidered, it is known, or ſuſpected, that *worms* are the cauſe of diſturbance in the ſyſtem, it becomes our buſineſs to get rid of them as ſoon as we can, and with as little danger to the patient as poſſible.

In this view, the indications are, firſt, to adminiſter ſuch medicines as will oblige them to let go their hold, and diſlodge them from their ſituation; ſecondly, to expel them from the body; and thirdly, to prevent a return of the complaint, by ſuch medicines and regimen as will invigorate the ſyſtem, and prevent the accumulation of viſcid mucus in the inteſtines.

Many and various have been the medicines exhibited, and even celebrated, for the expulſion of theſe inteſtine enemies.

Bitter purgatives, oily medicines, chalybeates, preparations of tin, iron, and zinc; garlic, helleboraſter, the root of the male fern, which is the baſis of Madam Nouffer's celebrated Swiſs

remedy—draſtic and reſinous cathartics; the juices of plants celebrated for their anthelmintic qualities, have all had their turn, and all, in their turn, have failed.

Bitters will not prove effectual, for *Le Clerc* tells us, that he found worms, not only in the liver, but in the gall-bladder itſelf, of a ſheep which he diſſected; which were active and lively, ſwimming in the gall itſelf, the bittereſt of all the ſecretions.*

Oils, which kill all other inſects, will not here anſwer. It is true, it may deſtroy a few Aſcarides in the vicinity of the rectum, when adminiſtered as a glyſter: but how is the oil to be conveyed into the jejunum, or ileum, unaltered, ſo as to drown the *teres*, or a *tape-worm?* The tract of the inteſtines it has to paſs through, and the changes it undergoes before it reaches the ſeat of worms, render it inert. But we are even told the experiment has been made of putting live *teretes* into common oil, in which they have lived and moved for *ſeveral hours*.†

Practitioners not attached to any particular remedy, among thoſe generally conſidered as ſpecifics, place dependence on mercurials; but mercury, in all its various forms, has been exhibited in many millions of real worm caſes, without any other effect than injuring the conſtitution.

And here I muſt take permiſſion for the ſake of the ſons and daughters of Africa, and their deſcendants, to make a few ob-

* Le Clerc, Hiſt. Lumb. lat. p. 94.

† Nonnulli affirmaverunt ad vermis vitam neceſſe eſt, ut quædam materies perſpirabilis e corpore prodeat, et hanc repellendo, vermis necari dicitur. Hinc, OLEUM exhibetur; hæc opinio in incerto eſt, et ſi vera ſit, a longitudine inteſtinorum vix poſſibile erit ut immerſio vermium oleo perfici poſſit: Ab experimentis illuſtr. *Torti* ſatis evidenter apparet, *vermes teretes* in oleo communi per plures horas commode vixiſſe.

Broughton, Diſſ. Inaug. de Vermibus inteſtinorum.

ſervations on the indiſcriminate uſe of mercury, as a vermifuge, in the *Weſt India iſlands.*

Mercury, unleſs very cautiouſly given, and in very ſmall quantities, is rank poiſon to the conſtitution of a negro. The many fatal effects I have ſeen, in the courſe of ſeveral years practice in the iſland of Jamaica, convince me of the truth of what I have here aſſerted.

Such practitioners, therefore, (and I have known ſuch,) who indiſcriminately adminiſter mercurial preparations to the negroes entruſted to their care, conſult neither their own reputation, nor the intereſt of their employers, whoſe number of ſlaves is too often leſſened, and many uſeful, healthy negroes deſtroyed, by the too frequent, and raſh exhibition, of that excellent, but dangerous mineral. Nor are its pernicious effects confined to the Blacks. White people often feel the ill conſequences of an indiſcreet uſe of it. Mercury is to be uſed with much leſs freedom in warm, than in cold climates—and the ſame quantity, which ſhall not produce any ſenſible effect in Europe, will in the ſame conſtitution, within the torrid zone, operate in a powerful manner.*

The blood of ſuch negroes, as work hard in hot climates—take but little reſt, and live moſtly upon a vegetable diet, will, even in a healthy ſtate, be found much thinner, and leſs diſpoſed to coagulate, than that of white people. Mercurial medicines, therefore, are hurtful, by breaking down and deſtroying the texture of the blood, already too much diſſolved, by heat, and the nature of their proviſions.

* The yellow fever affords an exception to this rule. It is aſtoniſhing how much mercury may be taken by patients labouring under this dreadful diſeaſe, without exciting ptyaliſm. Ten grains of calomel every ſix hours, continued for ſeveral days, is no uncommon practice; and this bold exhibition of it, according to the beſt accounts I can learn, has been attended with the happieſt effects.

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Mercury, unleſs very cautiouſly given, and in very ſmall quantities, is rank poiſon to the conſtitution of a negro. The many fatal effects I have ſeen, in the courſe of ſeveral years practice in the iſland of Jamaica, convince me of the truth of what I have here aſſerted.

Such practitioners, therefore, (and I have known ſuch,) who indiſcriminately adminiſter mercurial preparations to the negroes entruſted to their care, conſult neither their own reputation, nor the intereſt of their employers, whoſe number of ſlaves is too often leſſened, and many uſeful, healthy negroes deſtroyed, by the too frequent, and raſh exhibition, of that excellent, but dangerous mineral. Nor are its pernicious effects confined to the Blacks. White people often feel the ill conſequences of an indiſcreet uſe of it. Mercury is to be uſed with much leſs freedom in warm, than in cold climates—and the ſame quantity, which ſhall not produce any ſenſible effect in Europe, will in the ſame conſtitution, within the torrid zone, operate in a powerful manner.*

The blood of ſuch negroes, as work hard in hot climates—take but little reſt, and live moſtly upon a vegetable diet, will, even in a healthy ſtate, be found much thinner, and leſs diſpoſed to coagulate, than that of white people. Mercurial medicines, therefore, are hurtful, by breaking down and deſtroying the texture of the blood, already too much diſſolved, by heat, and the nature of their proviſions.

* The yellow fever affords an exception to this rule. It is aſtoniſhing how much mercury may be taken by patients labouring under this dreadful diſeaſe, without exciting ptyaliſm. Ten grains of calomel every ſix hours, continued for ſeveral days, is no uncommon practice; and this bold exhibition of it, according to the beſt accounts I can learn, has been attended with the happieſt effects.

In Jamaica, it is too common a cuſtom to ſend a negro, that receives the ſlighteſt ſcratch, or has the leaſt ſore on the leg, or foot, to the hot-houſe*, where the poor wretch is immediately

* Upon plantations in the Weſt Indies, the apartment appropriated for the uſe of the ſick and lame negroes belonging to each reſpective plantation, is called, in Jamaica, the *hot-houſe;* in the other iſlands, with more propriety, the *ſick-houſe*. I cannot ſay I ever ſaw above *ten* well contrived ſick-houſes in my life. *One* of the beſt that ever I ſaw, and what may well be conſidered as a pattern for others, is at Water Valley, in St. Mary's (the north ſide of the iſland of Jamaica) the eſtate of Doctor James Naſmyth, a gentleman to whom I am much obliged for many curious particulars relative to the medical properties of many of the Jamaica plants.

This improper, and abſurd appellation, *hot-houſe*, has been productive of more miſchief, than many proprietors are aware of.

A houſe for the ſick ought to be as cool, airy, and clean, in thoſe hot climates as poſſible; but inſtead of this, the managers, or overſeers, to whom the building of the hot houſe, as well as every other office belonging to a ſet of works, is too often entruſted, ſeem unwilling, that ſuch a building ſhould have its name for nothing; and therefore take care that it ſhall be *literally a* HOT *houſe*, by building it cloſer, and with fewer windows, than any other houſe on the eſtate. Nay, I have actually ſeen hot-houſes without any other aperture for the admiſſion of air or light, than the door! Architects who build after ſuch a faſhion as this, muſt have taken their ideas from the black-hole at Calcutta. What muſt the poor wretches ſuffer, who are locked up at nights, ſometimes as many crammed together as the place will hold, in ſuch infernal dungeons, under the notion of "*getting them well*" of their different complaints!

And theſe abſurdities will ever triumph over common ſenſe, ſo long as overſeers are permitted to be architects, whether they know any thing of the matter, or not.

It is not to be denied, that among overſeers, are to be found many men of genius, men of liberal education, and, in every reſpect, unexceptionable. But I am ſorry to ſay, that far the greater number are ſtrangely deficient in points wherein they think themſelves amply informed. Indeed, in points wherein, it is abſolutely neceſſary, they *ought* to be well informed.

I have known many people, who, though they had not a ſingle idea abſtracted from making the moſt of a ſugar cane, ſet up, on being made overſeers, for men

confined to the ſtocks, that the ſore may not be enlarged by walking about; and there doſed, twice a day, with a ſolution of corroſive ſublimate in rum, adminiſtered in a cup of the decoction of ſarſaparilla, or lignum guaiacum. In a good habit the confinement, and keeping the wound clean, will effect a cure; but though in more obſtinate caſes, alteratives *may* be, and certainly *are*, neceſſary; yet, the indiſcriminate exhibition of Van Swieten's ſolution, as they call it, to every negro that has a little ſore on his leg, does more harm than good. I have known many good conſtitutions much injured by its uſe, and dropſies brought on by thoſe medicines that were intended at firſt to cure a ſore leg.

In like manner, mercury adminiſtered with intent to kill worms has often brought on a worſe diſeaſe; rheumatiſm, bone-ach, from taking cold; conſumption, aſthma; confirmed aſcites; have but too often followed the injudicious uſe of that mineral.

If mercury be given at all for the expulſion of worms, the ſafeſt way of adminiſtering it has always appeared to me to be in ſmall doſes of Dimſdale's powder.* But even this is not always effectual. And it is very extraordinary, that where *nature* has pointed out and ſupplied us with the nobleſt and ſafeſt anthelmintics, the preparations of *art* ſhould be ſubſtituted, and

of univerſal knowledge. A man of this ſtamp, as ſoon as he enters upon his office, becomes in a moment, like the Pope, *infallible*. He not only decides with authority upon all queſtions relative to the buſineſs of *planterſhip* and *ſugar making*, but as if by inſpiration, he commences architect, ſurveyor, doctor, grazier, diſtiller, and politician; cum multis aliis; and it moſt commonly happens, that he who would ſeem to know every thing, and be a proper judge of every thing, knows, in fact, nothing at all.

* Calomel & Pulv. e. chel. Cancror. comp. āā gr. iij. Antimon. Tartarizat. gr. $\frac{1}{8}$, vel $\frac{1}{12}$.

preferred, though inferior in virtue, and more hazardous in their conſequences.

Few or none of the European medicines are equal in efficacy to thoſe vermifuges which the Eaſt and Weſt Indies ſupply us with.

The *worm-graſs* is highly commended by many, and is allowed a place among the firſt anthelmintics, by thoſe who have been accuſtomed to give it. Its uſe principally obtains among the free black and Mulatto women of Jamaica, who make a livelihood by practiſing phyſic among thoſe of their own colour, with the medicinal herbs which nature ſo abundantly beſtows in that climate.

It is the *anthelmia* of Dr. Browne, and the *ſpigelia* of Linnæus.

The preparations of it are an infuſion, decoction, and the clarified juice.

Dr. Browne, who, in his *Natural Hiſtory of Jamaica*, gives us the beſt methods of preparing it, ſpeaks very highly in its praiſe. Thoſe, to whom it is adminiſtered, are firſt affected, as if with a degree of intoxication. It then procures ſleep almoſt as certainly, and in the ſame degree as opium; and the patients eyes, after the ſleep is over, appear ſparkling and diſtended. However, the exhibition of it is not unattended with danger; if the doſe be too little it will do no good, and exceſs in the doſe, I have known productive of diſagreeable effects.

The *aſclepias*,* which is the *apocynum* erectum, folio oblongo, &c. of Sloane; from its emetic quality, called baſtard, or wild

* Aſclepias erecta, foliis anguſtis acuminatis, verticilliter ternatis floribus umbellatis. BROWNE.

ipecacuanha, and by the negroes, red-head, is a powerful vermifuge.

The uſual way of adminiſtering it, is either in a decoction, or the expreſſed juice of the leaves. Of the former, half a pint is the uſual doſe to an adult, when intended as an emetic. In the latter form, from a tea-ſpoonful to three table-ſpoonfuls may be given as an emetic, according to the age, conſtitution, and ſtrength of the patient. The expreſſed juice may alſo be made into a ſyrup with ſugar.—I have known it to bring away worms (after operating as an emetic) from patients in whom there never appeared any ſymptoms of them. If there are any in the ſtomach, it certainly diſlodges them. When the crude juice is to be adminiſtered, I would recommend an addition of an equal or a double portion of lukewarm water with it, which makes it operate more gently, and likewiſe more effectually.

Browne ſays, the juice is a powerful aſtringent. I cannot ſay I ever knew an inſtance of its being aſtringent, and therefore imagine he muſt have taken his account, not from his own experience, but the report of others.

The bark of the *Baſtard Cabbage-Tree (Geoffrea Inermis)*, ſtands among the firſt, in the liſt of powerful vermifuges.

It is the bark of a tree, very frequently to be met with in the mountainous parts of Jamaica, which grows to a conſiderable height. The bark is of an aſh colour, ſometimes ſpotted with reddiſh, or iron coloured ſpots. The outer thin bark, or epidermis, being peeled off, the inner bark appears, when dry, of a ruſty iron colour, and its *interior* ſurface of a cineritious hue. Altogether, when ſtripped off the tree, and kept for uſe, it is not unlike the eleutheria, or caſcarilla bark. The wood of the baſtard cabbage-tree is exceedingly hard and durable, and much uſed for the purpoſes of building, where

ſtrength and ſtability are required. The leaves are oblong, oval, ſmooth, and of a beautiful green colour, diſpoſed in a pinnate form along the ſtem.*

Of this tree, there are ſaid to be two ſorts, the male and the female. The bark of that only which is called the FEMALE *Baſtard Cabbage-tree*, is applied to the purpoſes of medicine. This latter, in the months of April, May, June, and July, appears moſt beautifully adorned with very large ſpikes of papilionaceous bloſſoms, of a purple colour, which are ſucceeded by a fruit, of the ſhape, ſize, and appearance of a green walnut; being a drupa, containing one oval kernel, incloſed in a hard, ſmooth, thin ſhell.†

* Since the publication of the former editions of this work, Doctor Woodville's MEDICAL BOTANY has made its appearance in the world, in which a much better account of the Geoffræa inermis is given, than is to be found in any other author. *See his Medical Botany*, Vol. II. page 306.

† Dr. Browne has given a very imperfect account of this tree, in his Natural Hiſtory of Jamaica. He has not deſcribed it in its proper place, but refers it to his appendix, which treats only "*of thoſe vegetables whoſe characters are not ſufficiently known.*" Why he ſhould call it a *ſpigelia*, I cannot conceive, unleſs it was becauſe he was fond of altering Linnæus's names, and as he had choſen to give Linnæus's *Spigelia, the worm-graſs*, his new name of *Anthelmia*, or, as one of his editions has it, "*Anthelmenthia*,") he thought proper to transfer the name of Spigelia to this tree, which has not the leaſt reſemblance of a Spigelia.

He ſeems totally ignorant to what claſs and order it belongs, as alſo of the characters of the flower, which he leaves undeſcribed. I have endeavoured to ſupply his deficiencies, by adding that part of the underwritten deſcription which is printed in *italics*; and which, though not ſtrictly conformable to the rules of Botany, may nevertheleſs be found ſufficient to convey an idea of the flower.

SPIGELIA foliis oblongis nitidis pinnatis, cortice glabro cinereo.

Flores in aliis maſculini, in aliis fœminini dicuntur.

Mas deſideratur.

The moſt uſual way of exhibiting this bark, is in decoction. About an ounce, or an ounce and a half, groſsly powdered, may be boiled in a quart of water, until it is reduced to half a pint. By this time, the decoction becomes very high coloured, like old Madeira wine, or porter; but if it ſhould not then attain that colour, (which is generally looked on as the criterion of its being properly prepared) the boiling muſt be continued longer; for in a ſtrong decoction only the efficacy lies.

The taſte of this decoction is not unpalatable, nor is it from any bitterneſs that the bark derives its efficacy, as ſome have imagined; but from a ſpecific quality, powerfully noxious to all kinds of worms bred in the human body.

The doſe to children, is from a table-ſpoonful, to a ſmall wine-glaſsful. Adults of a ſtrong conſtitution may venture on a large wine-glaſsful. Of this decoction, a doſe proportionable to the age and conſtitution of the patient is to be given, either ſimply or ſweetened with honey, ſugar, or molaſſes, for three or four mornings ſucceſſively.

FOEM. Perianthium? *Monophyllum, campanulatum, quinque-crenatum, purpuraſcens.*

Corolla? *Papilionacea: Vexillum amplum, cordato-ovatum; Alæ oblongæ: Carina bipetala.*

Stamina? *DIADELPHIA: Filamenta decem, quorum, novem infernè connata, ſupernè, libera ſunt. Decimum vero ſimplex, à cæteris ſejunctum exſtat. Antheræ minimæ oblongæ.*

Piſtillum. GERMEN ovatum. STYLUS brevis attenuatus, *aduncus, ſubulatuſ.* STIGMA acutum.

Pericarpium. DRUPA carnoſa, firma, ovata, lineâ longitudinali lateraliter notata, unilocularis, monoſpermis.

Semen. NUCLEUS bilobus, ovatus, membranâ tenui obvolutus, & nauco ligneo glabro, lineâ longitudinali lateraliter notato, tectus.

A doſe of ſome medicine of the purgative kind ſhould be then interpoſed—ſuch as jalap—rhubarb—ſal. glaub. or what is ſtill better, as more immediately anſwering the intention, an ounce of oleum ricini.

Beſides the decoction, this bark has been found efficacious, when taken in ſubſtance, finely powdered. From five grains to a ſcruple, may with ſafety be ventured on, and even farther: combined with jalap, it operates with greater certainty of ſucceſs than when exhibited by itſelf.

Some years ago, the ſmall-pox happening to make its appearance in that part of the iſland of Jamaica where I reſided, it was thought expedient on that occaſion to make preparations for inoculating all perſons both white and black, that had not had this diſorder.

Thoſe white people, whom I attended, and the negroes belonging to the different eſtates and ſettlements which I had the care of, were forthwith put under a preparatory regimen.

The antiphlogiſtic method, recommended by baron Dimſdale, as being the moſt applicable to the climate; (as well as the moſt rational, in *any* climate) is of courſe the moſt univerſally adopted in that part of the world.

The mercurial preparation, given over night, I did not ſtrictly adhere to. To the ſtrongeſt negroes, the quantity of calomel given for a ſingle doſe, never exceeded three grains. To ſome, I judged it altogether improper to give any.

But as the very ſmall annual ſum allowed to ſurgeons, for the care of negroes in the country parts, will not admit of the exhibition of very expenſive medicines, I was reduced to the

neceſſity of ſetting my invention to work, to find out a cheap purgative, that ſhould at the ſame time be ſafe and efficacious.

The four-o'clock-flower (Mirabilis Jalappa) grew in great plenty about the place. This is the jalapium officinale; and the roots of this, ſliced and dried, were not to be diſtinguiſhed from the common jalap of the ſhops.

But whether from the difference of the climate, or ſoil, the Jamaica jalap has not the ſame effect as that which is brought to us from South America, I was obliged to give it in double quantity; and even then it did not always take effect. The largeneſs of the doſe rendered it diſguſting.

At laſt, I determined to try who far the cabbage-bark, combined with a ſmall quantity of the true jalap, might aſſiſt its operation; or rather, what effects might be the reſult of ſuch a combination. I gave ten grains of jalap only, with ten grains of the bark, in water, to an adult, of a robuſt conſtitution. It ſucceeded beyond my expectation as a purgative. I made a few more trials with equal ſucceſs.

After this, I prepared a large quantity of equal parts of jalap and cabbage-tree-bark, as a common purging powder for negroes of all denominations, which I found to anſwer very well in doſes of half a drachm; and in ſome few caſes wherein it did not operate ſo well, two or three grains of gamboge, thrown in, to quicken its operation, produced the deſired effect.

This experiment convinced me of two facts. Firſt, the univerſality of the complaint of worms among negroes; for, of *two hundred and fifty-four* negroes, whom I had then under preparation, *two hundred and ſixteen* took the cabbage-bark; of whom, *one hundred and ninety-three* paſſed worms, after taking

the powder two or three times. Among theſe, I do not reckon ſeveral new negroes, and others that I could expect no exact account from. The remaining number, to whom I *did not* give the bark, were either ſuch as from their conſtitution required other treatment, or elſe belonged to perſons who ſupplied their own medicines.

From that time I conſtantly adhered to the uſe of the cabbage-bark, and in the ſubſequent courſe of my practice, made the decoction of that bark the common vehicle for all medicines of the aperient kind, ſuch as jalap, pulv. rhei, magneſia, &c. both to white patients and negroes, whenever particular circumſtances did not forbid it; nor did I ever perceive any bad conſequences ariſe from ſo indiſcriminate a uſe of this medicine.

I was now deſirous of examining how far a ſpirituous tincture of it might be of uſe; and infuſed four ounces of the bark, groſſly powdered, in two pints of rum, which I digeſted in the heat of the ſun for ſix days. Of this tincture I gave a ſmall wineglaſsful, inſtead of a common dram, for five or ſix mornings running, by way of gratuity, to two or three luſty fellows that I knew to be ſubject to worms; but though they liked the dram, and came regularly for it, I never could find whether it had the deſired effect.

I drew a very ſmall quantity of extract from a pound of the groſs powder boiled in a gallon of water. This I gave in the quantity of a grain; then two grains, and by degrees as far as five, to three ſubjects I had choſen; but I found no remarkable effects from it, prepared in this manner. One of thoſe who took it was ſeized with a violent ſickneſs at the ſtomach, but whether it aroſe from the effects of the extract, or from ſome other cauſe, I had not leiſure to examine.

However, as I had already two very good and ſimple preparations; the *decoction*, and *powder*, I deſiſted from all farther inquiries into the virtues of the more operoſe preparations.

But notwithſtanding I had ſo much reaſon to be ſatisfied of the *general* efficacy of this bark, I found my hopes diſappointed in two or three very obſtinate caſes, wherein, after almoſt every other anthelmintic, both native and European, had been tried in vain, I expected to derive very conſiderable advantages from a timely exhibition of the cabbage-tree bark.

The ill ſucceſs of the bark in thoſe caſes, induced me to make ſome inquiry concerning a medicine which I had heard of, as being ſucceſsfully given, in many parts, to all patients afflicted with complaints ariſing, or ſuppoſed to ariſe, from worms: and that, not only by regular practitioners, but even by ignorant negroes, at random, and without any juſt proportion inthe doſe.

This was the STIZOLOBIUM, or COWHAGE.

Satisfied, as I ſaid before, of the general efficacy of the cabbage-tree-bark, I had never given myſelf the trouble to make inquiry about any other more powerful vermifuge; nor did I think that there *could* be one more powerful, until the death of a negro girl, evidently occaſioned, as appeared upon my opening her, from vaſt numbers of worms lodged in the ſmall inteſtines, convinced me that I had not done my duty, and excited me to puſh my inquiries in ſearch of a more efficacious medicine ſtill farther.

I had heard ſo much of the *cowhage*, or *cowitch*, that I reſolved to make trial of it.

The ſubſtance which is known by this name, is the rigid, hairy coat, ſomewhat in appearance ſimilar to the pile of velvet, or rather pluſh, of a reddiſh brown colour, which grows on, or clothes the ſurface of a pod, in appearance like the pod of our Engliſh ſcarlet bean, to which plant indeed, the whole of the Cowhage-vine, both in its foliage, and manner of growth, bears a very near reſemblance. This hair, or pile, ſcraped off and mixed in ſome viſcid vehicle, is the part to be employed. The reſt of the plant is uſeleſs.

But the different modes of exhibiting the cowhage, were as various as the perſons who took upon them that office. One adminiſtered it in molaſſes. Caſtor oil was the favourite vehicle of a ſecond: and a third inſiſted, that it was of no ſervice unleſs mixed with honey.

The greater number agreed in giving molaſſes the preference; but there was even among theſe, a conſiderable diſagreement with regard to the proportions to be obſerved in the mixture. While ſome cautiouſly put but two pods of the cowhage into a quart of molaſſes, others boldly ſtirred up two dozen in a like quantity. Some again would have ſix pods to be ſufficient; and others imagined that ſome ſecret virtue, or charm, was to be expected, from having the number neither greater, nor leſs, than exactly *nine*.

By ſome, the ſetæ contained on the outſide of a ſingle pod, mixed with one or two table-ſpoonfuls of ſyrup, honey, or molaſſes, was given for a ſingle doſe, without diſtinction, to young and old. By others, a quantity of each ingredient was mixed together, without bearing any exact proportion to each other, farther than was merely ſufficient to bring the compoſition to the conſiſtence of an electuary; and one, two, or three tea-ſpoonfuls given as a doſe to children, and one, and ſometimes two table-ſpoonfuls to adults.

As far as I could learn, however different the compoſitions and proportions of the ingredients, the effects were found to be pretty much the ſame in all ages, ſexes, and conſtitutions.

I conſidered that the wonderful efficacy ſo generally attributed to the cowhage, could not be ſuppoſed to ariſe from any ſpecific medicinal quality reſiding in it, ſo much as from the ſharpneſs and elaſticity of the ſetæ, with which the pods are covered, which take the ſame effect on worms, as they do when applied to our ſkin. The ſetæ piercing, vellicating, and tormenting them in ſuch a manner, as obliges them to let go their hold; acting like ſo many needles, as may be plainly demonſtrated by viewing the ſetæ through a microſcope; which ſhews them to be a number of long ſpiculæ, needle-ſhaped, hollow, tranſparent, and armed with points, exquiſitely ſharp and fine.

The idea that their action is merely mechanical, is ſupported by the obſervations of ſeveral very judicious inquirers, who have made trial of the cowhage, who all agree in the opinion that it acts in the ſame manner as hair, cut fine, and given with the ſame intention; but much more effectually, becauſe of its inflexibility, and the exquiſite, and almoſt inconceivable ſharpneſs of its points.

Curious to know how far the application of the ſetæ to the external coats of worms bred in the human body would affect thoſe animals when expelled from the body, I waited not long before I had an opportunity of making the experiment.

A calabaſh full of very large ones, of the *teres* kind, in full vigour, voided by a poor emaciated patient, was brought to me. Among theſe, I ſprinkled ſome of the ſetæ. For a minute or two, no viſible effect was produced; but in a little time they began to writhe and twiſt themſelves in an unuſual manner, and exhibited evident ſigns of extreme torture. I took one of the worms

and viewing it through a magnifying glaſs, perceived that ſeveral of the ſetæ had pierced very deep, and, others were ſticking looſely in various parts of its body, but that none of the ſpiculæ, which had once entered into the ſkin, dropped off.

Convinced in a ſhort time, both from what I had heard, and from my own experiments on the internal exhibition of cow-itch, of the ſafety and efficacy of this incomparable medicine, I laid aſide the cabbage-tree-bark, and for ſeveral years have uſed no other vermifuge than this.

My uſual way of preparing and adminiſtering the cowhage, is in the form of an electuary, with honey, molaſſes, or ſyrup of a thick conſiſtence. Formerly I was not in the habit of obſerving any exact proportion of the quantity of the ſetæ; but as ſince the publication of the former editions of this treatiſe, the demand for it has increaſed beyond my expectations, I have found it neceſſary to adopt certain formulæ for aſcertaining the proportions; which proportions, although I find them in general to anſwer very well, I nevertheleſs, in ſome particular caſes, find it neceſſary to vary; for there never yet exiſted any general rule, to which ſome exception or exceptions could not be found. After repeated trials and experiments, in the courſe of five and twenty years, (during which period I have been in the conſtant habit of exhibiting the cowhage as an anthelmintic,) made with a view of finding out the beſt vehicle for this ſubſtance, I cannot ſay that I have found any leſs exceptionable, than the good old vehicle, common treacle, ſuch as is to be had at every grocer's. I have tried conſerves, but children cannot be prevailed on ſo readily to take them. Honey would not be an incommodious vehicle, but it is not with every ſtomach honey will agree; for it is well known, that in ſome conſtitutions, violent colicky complaints are brought on by the ſmalleſt quantity of honey, or even by drinking any kind of vinous liquor in which honey enters as an ingredient: and there are theſe advantages in treacle; firſt, that every body knows what

it is: ſecondly, there are few children who do not like it: thirdly, it is not apt to be ſpoiled, or to ferment, unleſs kept in too warm a place: and laſtly, it is gently aperient, and, in that view, an auxiliary to the principal ingredient. But if from a diſlike of treacle ſome other vehicle would be preferred, raſpberry jam or currant jelly will prove very good ſubſtitutes.

At the requeſt of ſome indulgent parents, in order to *cheat* into compliance ſuch of their children as could not be prevailed on to take any thing that has the appearance of a *medicine*, I was induced to turn in my mind how to exhibit the cowhage in the form of a lozenge; and after ſome trials ſucceeded in fixing on a formula that anſwers pretty well. It conſiſts of a due proportion of things extremely ſimple: ſugar, Indian arrow-root, and gum tragacanth, but no efficient article, except the Cowhage, unleſs in ſome few inſtances of private practice, or at the deſire of the medical practitioner who attends in the family of the patient.

But, though I have had many communications of the good effects of the lozenges, I cannot ſay I place ſo much dependance on them, or recommend them in my own practice, (unleſs where I meet with refractory and ſpoiled children, that are maſters and miſtreſſes over their mamma's,) as I find the ſimple electuary, made with nothing but Cowhage and treacle, anſwer every purpoſe.

Of this electuary, a tea-ſpoonful is in general found to be a ſufficient doſe for children, from infancy to the age of ſix or eight; from thence to fourteen, a deſſert-ſpoonful is found to anſwer well, and for all above that age, a table-ſpoonful. Formerly I thought it might be ſufficient if taken once a day, but experience has ſhewn me, that it anſwers better when taken twice; viz. at night, going to bed, and in the morning AN HOUR BEFORE BREAKFAST; and though little or no previous medi-

cine is neceſſary, yet it is *generally* found to operate more effectually, where a *gentle emetic* (provided nothing forbids it) has been premiſed.

The cowhage, after being begun upon, is to be continued for three or four days; after which ſome briſk purgative, ſuch as jalap, or infuſion of ſenna, or in ſhort, whatever purging medicine is known to agree beſt with the patient, is to be taken; which will in general bring away the worms, if there be any. Afterwards the cowhage is to be continued as long as there may ſeem occaſion; repeating the purgative at intervals of three or four days.

For the tape-worm, long experience has taught me, that the cowhage does not prove ſo effectual as againſt the other worms, unleſs the quantity of ſetæ be doubled. In very obſtinate caſes, I ſometimes find it neceſſary to increaſe the quantity of ſetæ even to a threefold proportion; for they will not eaſily be made to let go their hold, which they are as tenacious of, as they are of life. Profeſſor Pallas* poiſoned a dog with the *ſemina ſtaphidis-agriæ*, and on opening him after he had been dead for ſome hours, found, together with the poiſonous ſeeds, ſeveral living lumbrici and ſmall tape-worms.

Every one that knows what cowhage, or cowitch, is, muſt be ſenſible, that if the leaſt particle of it comes in contact with the ſkin, it cauſes a moſt intolerable itching, and ſometimes, in very delicate ſkins, no ſmall degree of inflammation, where it fixes. A ſingle briſtle of it, ſo ſmall as to be inviſible to the naked eye, is ſufficient to cauſe this inconvenience for a time, but it ſoon goes off. Microſcopic obſervations ſhew us, that the ſetæ are hollow, and conical, gradually leſſening from the

* *Pallas, Diſſ. Inauguralis de infeſtis viventibus intra viventia.*

baſe, until they terminate in the fineſt point that can poſſibly be imagined.

Here, then, the queſtion may very naturally be aſked, "If theſe finely pointed ſpiculæ, when applied externally to any part of the ſurface of the ſkin, occaſion ſuch tormenting and intolerable itching, ſometimes almoſt even to madneſs, may there not be danger of injury to the coats of the ſtomach and inteſtines from ſo many ſharp ſwords, as it were, received into the alimentary canal?" To this I anſwer, not the ſmalleſt degree of danger is to be apprehended. The many thouſands, who have taken it without any ill effect, ſhew its perfect ſafety. If a little honey, or treacle, be found ſufficient to defend the tender nervous papillæ of the lips, fauces, and œſophagus from the troubleſome effects of the ſetæ, certainly the mucus of the ſtomach and inteſtines, which is the guard provided by nature to protect the villous coat of theſe viſcera from injury, will be very ſufficient to defend thoſe parts from the irritation of the ſetæ. A daughter of my own, when about five years old, contrived to lay hold of a gally-pot that contained between three and four ounces of the common preparation of it; and, ſecreting herſelf in a corner, made one meal of what was intended to laſt her for three or four days, but without any other inconvenience than a ſmart diarrhœa, which did her more good than harm.

I can with truth aver, that I have never yet met with, in my own practice, any ill effects reſulting even from the moſt liberal uſe of the cowhage in any form; and, although I have, both publicly in print, and in every other way, for theſe twenty years paſt, ſet forth, that "if any diſagreeable ſymptoms, or any inconvenience whatever, cauſed or ſuppoſed to be cauſed, from the uſe of it, ſhould ever be noticed by thoſe who take or adminiſter this vermifuge, I ſhould conſider the communica-

tion thereof, by letter, ſtating circumſtantially the effects or inconveniencies complained of, as a very particular favour," I have never received, in all that time, more than two communications to that purpoſe; the one from the huſband of a Weſt-India lady at Bath, who ſtated, that he thought it had done his wife more harm than good, but did not enter into particulars; the other was verbally communicated by Dr. Hooper, who related to me that he not long ago gave ſome cowhage to a patient, in the Mary-le-bon Infirmary, whom he ſuſpected to have worms; that after taking it once, ſymptoms of enteritis appeared; which induced the doctor to diſcontinue it, but at the ſame time, Dr. Hooper very candidly added, that it is poſſible the man might have had enteritis, even if he had never taken any cowhage.

After all that has been ſaid reſpecting the ſafety of cowhage, nevertheleſs, however inoffenſive in general it may be, reaſon will dictate to us, that where the mucus of the ſtomach and inteſtines is abraded, or leſſened, from dyſentery, cholera-morbus, or any other cauſe whatſoever; or where there is a tendency towards inflammation in any part of the inteſtinal canal, the exhibition of this medicine cannot be unattended with danger.

I ſhall not go ſo far as to ſay, in praiſe of this my favourite medicine, that I *never* knew it to fail; but I will ſay, that I have experienced more certain good effects, and fewer ill conſequences, than from any other medicine, given with the ſame intention; inſomuch, that I have, ſince I firſt began to exhibit the cowhage, had no occaſion to look for any other vermifuge.

In the choice of cowhage, care ſhould be taken to have it good. That which is muſty, of a bad colour, and which has lain long in damp warehouſes, is to be rejected. I once was

very near bringing myſelf and the dolichos into diſgrace, by employing ſome which I had been obliged to purchaſe in London, in conſequence of a ſhip's being captured in its homeward bound paſſage from Jamaica, which had on board a conſignment of the article, coming to me. How it happened, or where the article which I bought originally came from, I do not know; it looked very well, but certainly it did not anſwer the purpoſe. On complaint being made of its inefficacy, I examined it more narrowly, and found it was deficient in that elaſticity of the ſetæ, which good cowhage ought to have; of courſe diſcontinued to uſe it.

AFTER TREATMENT.

WE are not to ſuppoſe, that after worms have been expelled from the ſyſtem, the patient is never again to be troubled with them. The ſame cauſes exiſting, which proved favourable to their multiplication in the firſt inſtance, will favour their regeneration. We are not therefore to ſit down, content with having got rid of our enemies for the preſent, and with them a great number of bad ſymptoms which they occaſioned, but ſo to invigorate the conſtitution as to prevent, if poſſible, their future attacks. In caſes where they have greatly debilitated the ſyſtem, much attention is required, to enable the patient to recover ſtrength. But, as no practitioner whatever can be ignorant of what is neceſſary to be done on ſuch occaſions, to enter into any long diſcuſſion, on this part of the ſubject, would be ſuperfluous.

As far as medicine is concerned, the tonic plan will be proceeded on; the Peruvian bark, quaſſia, preparations of ſteel, and though laſt, not leaſt in eſtimation, a well prepared decoction of the bark of the ſalix latifolia, or broad-leafed willow bark, recommended by Mr. G. Wilkinſon, ſurgeon, of Sunder-

land, in a late publication of his on that ſubject; and which, as far as I have made trial of it, ſeems well to merit the recommendation given of it, both by the author, and the reviewers.

To thoſe who can afford it, country air and exerciſe on horſeback; cold or ſea bathing; a due proportion of animal food; a few glaſſes of good wine after dinner; good porter, *if ſuch a thing is to be had;* in ſhort, every thing that is nutritious and ſtrengthening, will tend to fortify the ſyſtem againſt the future attacks of theſe inſidious enemies.

Native Minium.

Mr. Smithſon Tennant has announced his diſcovery of native minium in a vein of galena, in Devonſhire. A ſmall quantity of this mineral was found in the centre of a piece of cubic galena, accompanied with cryſtals of ſpar.

Monthly Magazine.

Precipitation of Copper by Tin.

Mr. Collard, of Birmingham, has found that copper may be precipitated from its ſolution in the ſulphuric acid by means of tin. The ſucceſs of the experiment depends upon the heat of the ſolution, which muſt be at or near the boiling point, when the tin is put into it. This diſcovery may lead to ſome very important reſults.

Monthly Magazine.

Syphon uſed as a Refrigerator.

The ſyphon has lately been applied to the worm tub as a refrigerator. The plan is for conveying water in any quantity to a worm-tub of the largeſt dimenſions, if perfectly air tight. The feed-pipe enters the bottom of the tub vertically, while the hot water or waſte-pipe branches out from a ſide-orifice near the top, and is ſoon turned to proceed vertically downwards, until its lower end is about two feet below the bottom of the feed-pipe; both the pipes have cocks near the lower ends. When the work is commenced, the cocks muſt be ſhut, and the tub filled through a hole at the top; when full, the hole at top muſt be ſtopped, and the cocks both opened together; the water will then commence running, and continue as the ſupply holds good; the apparatus acting entirely upon the principle of the ſyphon.

Monthly Magazine.

Rhodium and Palladium, their exiſtence proved.

Dr. Wollaſton ſome time ſince announced that he had extracted from the ore of platina two diſtinct metals, to which he had given the name of *rhodium* and *palladium*. The accuracy of his experiments was conteſted. In France, however, M. Collet Deſeotils has obtained the ſame reſults by following the ſame proceſs. The rhodium and palladium obtained by him were exhibited at a late meeting of the National Inſtitute.

Monthly Magazine.

Factitious Puzzolana.

An intereſting memoir has been lately preſented to the French National Inſtitute, by M. Dodun, on the diſcovery of a factitious Puzzolana. The author obſerves that the depoſited duſt of ancient volcanic ſubſtances, has been long uſed in Flanders, and the adjacent countries as a ſubſtitute for the Italian puzzolana, under the name of traſs, or aſhes of Tournai; and that certain lutulent eruptions of ancient volcanoes at Vivarais, had the ſame qualities as the puzzolana of Italy, and might be uſed inſtead of it. The diſcovery of a ſubſtance of the ſame kind was made by accident by M. Dodun in the neighbourhood of Caſtlenaudery in France, where there are immenſe beds of calciform fragments of iron ore, of from eight to ten feet thickneſs, following exactly the parallelism of the ſlightly inclined declivities. In the adjacent fields, there are many ſubſtances of the ſame nature, of violet, brown, and black colours, which reſemble lava, and which appear to have been brought to that ſtate by ſerving as hearths, or encloſures to the fires kindled in the fields by the peaſants, either for agricultural purpoſes, or perſonal convenience when they watch their flocks in winter.

The ſimilarity of theſe ſubſtances to volcanic products led M. D. to form a cement from them, by treating them in the ſame manner as puzzolana earth. The quantity of iron which theſe oxides ſeemed to contain, the abundance of their ſiliceous particles, and the alumina which entered into their compoſition; their great weight, and their non-effervescence with acids led him to preſume that the cement formed from them would bind under water. Numerous well-conducted and ſatisfactory experiments verified the ſolidity of his conjectures and proved that the factitious puzzolana had acquired under water a ſolidity at leaſt equal to that of Italy. In caſes where both were

uſed, and in which there could be no deception, the plaſter made with the Italian puzzolana was cracked and chapped, but that formed from the factitious kind had entirely preſerved the unity of its ſurface.

M. Dodun's ſucceſs, and the encouragement which he met with from the government of his country, excited him to farther reſearches into the principles of cement. He tried the calcination of various ſchiſts, of the bituminous, ferruginous, and argillaceous ſorts; but theſe contained too ſmall a portion of iron, for he avers that the puzzolanas owe their property of hardening in water ſolely to the ferruginous particles which they contain, and that the puzzolana which forms a body in the water is not fit to be employed in the open air, where it cracks and chaps in all directions. On the other hand, that which is proper for the air, and which acquires and preſerves its tenacity in it, ſets but imperfectly in water. Theſe are diſtinguiſhed by their colour as well as by the peculiarity of their properties. The puzzolana proper for works under water, is of a reddiſh brown; that which is fit for works expoſed to the air, is a dark violet. The latter is uſed for terraces, the embankment of baſins, for the compoſition of encloſures, or light roofs. It adheres ſo ſtrongly to glazed tiles, as not to be detached from them without breaking the tiles. The puzzolana uſed under water forms a moſt ſolid body. Three months after immerſion it is an actual ſtone, capable of receiving a poliſh. The lime in it is always converted into carbonate of lime in ten weeks.

M. D. next proceeds to deſcribe the exterior characters of the quartziferous oxides of iron, which form the baſis of his factitious puzzolana. Their colour is of a reddiſh-brown before calcination, or ſlightly violet. A light torrification gives them a clearer red tint, or a deep violet; one more intenſe renders them of a deep brown inclining to black. Urged by a

longer continued heat, the colour acquires a deep black, then the ſubſtance becomes porous entirely ſimilar to certain lavas of modern and ancient volcanoes. Their fracture is grained, and a little earthy, and ſmall chryſtals of quartz may be diſtinguiſhed in them by the naked eye, and almoſt always angular fragments of grey or milky quartz :—their ſmell is ſtrongly argillaceous on breathing on them. There is no fire produced by the uſe of the ſteel, when it does not ſtrike a quartzoſe particle. They do not effervеſce with acids either hot or cold. The magnet acts a little on theſe oxides before calcination, and ſtrongly, or perceptibly after it. The weight is about 125, while that of the Italian puzzolana is but 91.

Theſe oxides contain

50 parts of ſilex.
31 —— of iron.
16 —— of alumina.
3 —— of manganeſe and loſs.

100

The puzzolana of Italy contains

50 parts of ſilex.
25 —— of alumina.
16 —— of iron.
3 —— of lime.
6 —— of loſs.

100

Their reſpective properties may be appreciated according to the proportions of their integrant parts. The exceſs of alumina cauſes the plaſter made from the Italian puzzolana to crack

and chap in the open air: This fault ariſes from their great oxidation.

M. D. endeavoured to obtain a regulus from theſe oxides of iron by uſing violent heat. He followed the proceſs of Kirwan for the fuſion of ſiliceous and argillaceous ores of iron; yet he never obtained a ſingle metallic button; and only found at the bottom of the crucible a vitrified maſs of an opaque black, or a ſcoria in the ſtate of crude caſt iron. He then attempted to obtain a malleable button by uſing the blow-pipe, taking borax for the flux and ſupporting the oxide on charcoal, but could only procure a ſpongy ingot reſembling crude caſt iron. But being placed on a ſupport of glaſs, the oxide fuſed at the ſecond attempt, the ſupport was coloured green, and ſmall grains of iron were ſeen to paſs firſt of a dark green colour, then of a bright green, and afterwards to diſappear in evaporating. There remained on the globule only a ſlight tinge of blackiſh green.

As a general reſult M. Dodun infers that this oxide is entirely deprived of its metallic principle, and that its ſuper-oxigenation renders it reducible and refractory. He ſuppoſes that the arts may draw advantages from theſe oxides by uſing them as pigments.

It ſhould ſeem that this diſcovery may be of uſe in this country as there are in many parts of it large maſſes of iron ſtone, ſome of which are found in the vicinity of moſt coal mines. It has been long known that iron ochres have the ſame property of forming puzzolana with lime when properly roaſted; and a patent has been obtained for the application of iron pyrites to the ſame purpoſe. But the novelty of M. Dodun's diſcovery is, that poor iron ſtone is equally fit for this purpoſe, as the other ſubſtances mentioned, which is of more importance as it is very plentiful, and may often be procured in ſituations

where the others cannot. Baſalt treated in the ſame manner has the ſame property as the puzzolana: the whinſtone, of which the ovoidal paving-ſtones moſtly conſiſt, is of this kind, and is found in great abundance here.

Monthly Magazine.

On the Hatching of Eggs. By the Royal Society of Sciences of Copenhagen.

The claſs of Natural Philoſophy had propoſed the following queſtion: "Is oxygen gas, or any other gas containing oxygen, abſolutely neceſſary for the hatching of eggs? Is it poſſible that eggs can be hatched in irreſpirable gaſes, and in this caſe in what mephitic gas?"

The ſociety reeeived an anſwer, written in French, with the motto, *Num veſcitur aurâ æthereâ?* The unknown author clearly deſcribes the preparations and means which he employs for this purpoſe. The reſult of his experiments is, that eggs may be hatched in irreſpirable gaſes. This reſult being contrary to the received opinions on the animal economy, the Royal Society therefore reſolved to direct every thing requiſite for this object to be prepared, and the experiments to be repeated by Meſſrs. Von Hauch, Wiborg, Herſcoldt, Rahn, Scheele and Bügge. Theſe gentlemen accordingly repeated the experiments in the different irreſpirable gaſes, conformably to the method of the author, and found a very diſtinct organization in the eggs; they perceived the ramifications of the veins and of the arteries, the pulſations of the heart, and in ſome eggs the members already formed, according as the eggs had been a longer or a ſhorter time in the machine. The experiments were ſeveral times tried with the ſame ſucceſs; but they took the precaution to examine the ſtate of the air in the recipients under which the operation took place. By means of the eudiometer

and other teſts, they were convinced, that, during the hatching, the irreſpirable gaſes under all the recipients had loſt their mephitic quality, and had become more or leſs reſpirable.

The reaſon of this ſingular phenomenon was found in the plaſter which the author employs to cloſe his recipients. The atmoſpheric air, and alſo a portion of oxygen gas, penetrated the pores of the plaſter, and ſucceſſively found their way into the recipients. This negative experiment demonſtrates that the author has not hatched his eggs in irreſpirable gaſes as he pretends.

The commiſſioners thought it would be intereſting to reply to the queſtion by deciſive and poſitive experiments. They procured a good cement or maſtic. They aſcertained by preliminary experiments that there was no paſſage for the air at the temperature requiſite for the hatching of eggs. The recipients were filled with atmoſpheric air, with oxygen gas, azotic gas, hydrogen gas, &c. All theſe recipients with the eggs were placed in a hatching machine. At the expiration of the neceſſary time, the gas in each recipient was examined with the utmoſt care, and it was found that the gas was of the ſame quality, that is, atmoſpheric gas, oxygen gas, azotic gas, hydrogen gas, &c. as previous to the beginning of the experiments. On opening the eggs the moſt diſtinct organization was obſerved in the eggs, under all the recipients filled with atmoſpheric air, or oxygen gas, but in all the recipients filled with irreſpirable and mephitic gaſes, the yolk had more conſiſtence, a different colour and taſte from what it has in its natural ſtate, and not the leaſt trace of the commencement of organization was found. Theſe experiments demonſtrate that the hatching of eggs cannot take place in irreſpirable gaſes, and conſequently the Royal Society could not crown the memoir, whatever eſteem it may have for the talents and the knowledge of the author.

Monthly Magazine.

Horſe-ſhoe found in the middle of a Tree.

As two ſawyers, in the boat-building yard of Mr. Maſterman, on the South ſhore, Newcaſtle, (Eng.) were lately ſawing a well-grown elm-tree, they were ſuddenly ſtopped in the middle of their work by a harder body than the wood, which on further examination, proved to be a horſe-ſhoe, in good preſervation, and which, there is no reaſon to doubt, had been there ſince the growth of the timber. It was found in the very core of the tree, where a fine impreſſion of the ſhoe was made on the ſurrounding ſurface. No viſible injury appeared to have been ſuſtained by the timber.

Monthly Magazine.

Palmer's Proceſſes for preſerving Lime Juice, &c. From the Calcutta Gazette.

The limes come in between the latter end of October, and the middle of November, and as they arrive ſucceſſively, the juice is to be ſqueezed into gomlehs, holding about one maund and a half, and in the evening poured into large caſks or pipes, from which rum, brandy, or Madeira, has been lately taken out. But before the juice be poured out of the gomlehs into theſe caſks in which it is to be collected for purification, a red-hot iron bar, about eight inches long, four inches broad, and two inches thick, having an iron chain fixed to it by a hook, muſt be twice quenched in it, turning it equally round on all ſides.

When the caſk in which the juice is collected in this manner is nearly full, put into it for every maund or ten gallons of

juice, half a gallon of Bengal rum full-proof; and it will then ſettle and clarify itſelf by the beginning of December; when it may be drawn off for uſe, either into ſmall caſks or bottles.

The Proceſs for preſerving Limes.

The limes are in their higheſt perfection in the month of December and five hundred being put into a well-dried fifteen gallon keg, will fill about one-half. The remaining part is then to be completely filled up with lime-juice that has ſettled and clarified itſelf in the caſk as now deſcribed.

The keg being thus filled with lime juice, is to be ſlightly bunged up the firſt day, but the next day is to be completely ſecured againſt the admiſſion of air.

In about one month the kegs will be found to want about two bottles of juice, which has been ſoaked up. This deficiency is to be ſupplied by means of a ſmall tapering pointed funnel introduced by boring a hole with a gimlet an inch from the bung; which being cloſed again, the keg is then ready for ſea. But whether at ſea or on land, it will be neceſſary to fill it up again in the ſame way.

Theſe kegs muſt have eight ſtrong new hoops; and being prepared in this manner, the limes are warranted to keep twelve months and longer in high preſervation.

Great care muſt be taken that no water be put into the juice, otherwiſe it will be vapid and cloudy.

The Proceſs of making Sour-Krout.

In the month of February, when the cabbages are in high order, take thoſe of the cloſeſt texture, firm and freſh from the

earth. They are then to be cut the ſame day into ſhreds or ſlices about an inch thick, and opened a little to receive the ſalt, if the cabbages be of a very cloſe texture. Being all well ſprinkled over and rubbed with ſalt, they muſt remain in this ſtate on the ſalting-table for twenty-four hours, in which interval they muſt be four or five times turned over, that the ſalt may take an equal effect upon all.

On the ſecond day the cabbage is taken from the ſalting-table, and put into a tub, or a pipe or puncheon, cut through in the middle; and being well preſſed down, the pickle, which conſiſts of one gallon of white ſalt to two gallons of water, muſt be poured upon it in a boiling ſtate, ſo as to fill up and pervade the whole; and care muſt be taken to keep the uppermoſt part well covered with it whilſt it is hot.

On the third day, when it will have ſunk about one-third in the pickling tub, the cabbage is taken out and put cold into caſks containing each about fifteen gallons, and being well preſſed down, and filled up within three inches of the top, one gallon of vinegar, and an equal quantity of lime juice, with two ounces of carraway ſeeds, four of caſſia or cinnamon, and four of allſpice, is poured cold into each caſk. The caſk is then filled up completely with ſome of the cold pickle taken from the pickling-tub; after which the bung is put in looſely for a day, and then finally ſecured againſt the admiſſion of air.

If it ſhould be neceſſary to fill up the ullage after two or three months, it muſt be done with cold pickle.

Monthly Magazine.

The following Extracts from "Turnbull's Naval Surgeon," although they may not be accounted particularly uſeful at preſent, are introduced with a View to the future advantage of the American Navy. E.

"*Office for ſick and wounded ſeamen, the 28th January*, 1805.

"*Particulars of ſuch part of his Majeſty's order in council of the 23d January*, 1805, *for improving the ſituation of the Medical Officers of the Navy, as relate to ſuch Officers ſerving on board Ships.*

It is ordered, that the number of aſſiſtants heretofore called "Surgeon's Mates," to be allowed to the ſurgeons of his Majeſty's ſhips, ſhall in future be regulated as follows:

Firſt rate	3	Aſſiſtants
Second rate	3	ditto
Third rate	2	ditto
Fourth rate	2	ditto
Hoſpital ſhips	3	ditto
And all other ſhips entitled according to the exiſting regulation to bear mates	1	ditto

That no perſon ſhall, in future, be appointed to ſerve as an aſſiſtant to the ſurgeon of any of his majeſty's ſhips, who ſhall not have been found qualified on examination to ſerve as ſurgeon, or as firſt aſſiſtant: that the pay of aſſiſtants ſo qualified ſhall be 6*s*. 6*d*. a-day, beſides the ſhip's proviſions; with half-pay when reduced, at the rate of 2*s*. per day, provided they ſhall then have ſerved two years ſubſequent to the date of this regulation; and 3*s*. per day, if they ſhall have ſerved three years from that date. That ſuch aſſiſtants ſhall be required to fur-

niſh themſelves with ſuch ſurgical inſtruments* as the commiſſioners for ſick and wounded ſeamen ſhall direct; and that they ſhall be rated on the ſhip's books, where the complement admits of more than one, according to their ſeniority on the liſt to be kept by the Sick and Wounded Board.

Whereas there are many ſurgeon's mates now ſerving on board his majeſty's ſhips, who have not obtained, and who may not for ſome time have an opportunity of obtaining the qualification before required, it is directed that ſuch as ſerve as firſt or ſecond mates or aſſiſtants, ſhall be allowed 5*s*. per day, and thoſe rated third mates, or aſſiſtants, 4*s*. per day.

Theſe three claſſes of aſſiſtants ſhall not be required to provide inſtruments, nor ſhall they be allowed half-pay; but they ſhall nevertheleſs, on proving themſelves duly qualified, be placed on the ſame liſt with the other aſſiſtants, from the date of the firſt appointment they may receive after ſuch qualification, and commence the time to be reckoned from half-pay from ſuch appointment.

All ſurgeons of the navy who ſhall not have ſerved in the whole ſix years, of which not more than three years time as hoſpital mate or aſſiſtant ſurgeon ſhall be allowed, ſhall receive, when employed, a full pay of 10*s*. per day; and when not employed, a half-pay of 5*s*. per day.

Surgeons of ſhips in active ſervice, after having ſerved ſix years, of which not more than three years time as hoſpital mate or aſſiſtant ſurgeon ſhall be allowed, ſhall be paid 11*s*. per day; their half-pay to be 6*s*. per day.

After having ſerved ten years, allowing not more than three years as hoſpital mate or aſſiſtant ſurgeon, the ſurgeon's full pay

* See on, for a liſt of theſe inſtruments.

ſhall be augmented to 14*s.* per day, his half-pay to remain at 6*s.* per day.

Surgeons of receiving-ſhips, ſlop-ſhips, convaleſcent-ſhips, priſon-ſhips, and all other ſhips, except hoſpital-ſhips, employed only in harbour duty, ſhall be allowed full pay, 10*s.* per day, with half-pay according to the time of their ſervice.

Surgeons appointed to hoſpital-ſhips ſhall receive a full pay of 15*s.* per day, unleſs in caſes where, by the length of their ſervice, they may have become entitled to a ſuperior rate of payment; their half-pay to be regulated, as in the caſe of ſurgeons of other ſhips, by the length of their ſervice.

Every ſurgeon in the navy, excepting ſurgeons ſerving on board receiving-ſhips, ſlop-ſhips, convaleſcent-ſhips, or any other ſhips than hoſpital-ſhips, employed only on harbour duty, ſhall, after twenty years ſervice on full pay, including not more than three years time as hoſpital mate or aſſiſtant ſurgeon, be allowed 18*s.* per day: and after ſuch length of ſervice, all ſurgeons, in whatever ſhips they may have ſerved, ſhall have a claim to retire on a half-pay of 6*s.* per day; but if the cauſe of their retirement ſhall be ill health contracted in the ſervice, and it ſhall be ſo certified by the commiſſioners for ſick and wounded ſeamen, the rate of half-pay on ſuch retirement, after twenty years actual ſervice, ſhall be 10*s.* per day.

Every ſurgeon in the navy, after thirty years ſervice, on full pay, including not more than three years as hoſpital mate or aſſiſtant ſurgeon, ſhall have an unqualified right to retire on half pay, at the rate of 15*s.* per day.

That medicines and utenſils ſhall be provided for the ſervice of his majeſty's ſhips and veſſels, at the expence of government, in ſuch proportions as ſhall from time to time be arranged by

the commiſſioners for ſick and wounded ſeamen; but the ſurgeons ſhall be required to provide, at their own expence, ſuch ſurgical inſtruments as ſhall be judged neceſſary by the ſaid commiſſioners.

No perſon ſhall be appointed phyſician to a fleet or an hoſpital, who ſhall not have ſerved as ſurgeon at leaſt five years; the daily pay of a phyſician, on his firſt appointment, to be one guinea, his half-pay half a guinea.

When he ſhall have ſerved three years as phyſician to a fleet or an hoſpital, his full pay ſhall be one guinea and a half per day, his half-pay 15*s*. per day.

The full pay of a phyſician, who ſhall have ſerved in that capacity more than ten years, ſhall be two guineas per day, his half pay one guinea per day.

That phyſicians, when a reſidence is not provided for them, ſhall be allowed one guinea per week lodging money.

To the widows of phyſicians and ſurgeons, ſuch a penſion ſhall be allowed as the lords commiſſioners of the admiralty ſhall think it right to grant.

None of the officers before mentioned, who ſhall retire from their reſpective employments without the approbation of the commiſſioners for ſick and wounded ſeamen, or who ſhall refuſe to ſerve when called on, if judged capable of ſervice, ſhall be allowed to receive half-pay, nor ſhall their names remain on the naval liſt. Their widows will not in conſequence be entitled to any penſion.

No officer, of whatever deſcription, ſhall be entitled to any of the advantages ariſing from this regulation, who ſhall not

have ſerved during the preſent war, or until he ſhall have ſatisfied the commiſſioners for ſick and wounded ſeamen of his inability to ſerve, but ſuch perſons ſhall be permitted to remain on the ſame eſtabliſhment on which they may now reſpectively happen to be."

The ſame author has aſſigned a part of his work to what he calls a naval pharmacopœia, or diſpenſatory, and as the obſervations ariſing from long experience, may prove uſeful to our infant navy, the editor will be excuſed for his copious extracts.

"Having now finiſhed, as far as the limits of this work will permit, a general detail of the principles and practice of naval medicine and ſurgery, adapted to the various ſituations and circumſtances of the Britiſh ſervice, it remains, in the laſt place, to conſider the particulars of the medicine cheſt, and to adapt the formulæ of preſcription to the different forms of diſeaſe deſcribed in the preceding parts of the work.

The great objects in naval practice, are, firſt, to carry no more medicines than what are wanted to ſea; and, next, that theſe medicines ſhould conſiſt at the ſame time of the moſt active, cheap, and uſeful articles.

With this view, the following ſelections of articles will be found ſufficient to anſwer every purpoſe. The quantities are intended for the conſumption of one year, for one hundred men; and according to the different rates of the veſſels, and the greater number of men, the quantity muſt be augmented in proportion, at the diſcretion of the ſurgeon.

The aſſortment of theſe articles we ſhall divide into two diſtinct parts, as applicable, firſt to the medical, and, ſecondly, to the ſurgical branch of the ſervice,

I. *Medical Diviſion.*

The medical part of the cheſt may be divided into articles of Diet and Pharmacy.

Dietetic Articles.

The articles of diet for the ſick will fall properly to the charge of the purſer, but ſhould conſiſt of the following liſt of neceſſaries.

Barley,	three hundred pounds.
Eggs,	greaſed and put in ſalt, twenty dozen.
Extract of ſpruce,	twelve pounds.
Lemon-juice,	clarified, and preſerved by adding to it a ſmall proportion of ardent ſpirits, five gallons.
Raiſins,	fifty pounds.
Rice,	two hundred pounds.
Coarſe ſugar,	one hundred pounds.
Sago,	twenty pounds.
Salep,	ten pounds.
Portable ſoup,	fifty pounds,
Tamarinds,	ten pounds.
Beſt white wine,	three hundred gallons.
Beſt red wine,	one hundred gallons.

Pharmaceutical Articles.

Principal Articles.

Peruvian bark,	ten pounds; but if the ſhip is deſtined for a hot climate, twenty pounds.
Calomel,	two ounces and an half.
Emetic tartar,	one ounce and an half.
Ipecacuanha,	four ounces.

Opium,	one ounce.
Purging ſalts,	ten pounds.
Senna leaves,	two pounds.

Secondary Articles.

Aloes,	half an ounce.
Ammoniacum,	two ounces.
Balſam of copaiva,	three ounces.
Cantharides,	one ounce.
Capſicum,	three ounces.
Traumatic balſam,	four ounces.
Camphor,	three ounces.
Caſtor,	one ounce and an half.
Chamomile flowers, or hops,	two pounds.
Cinnamon,	one ounce.
Prepared chalk, or oyſter-ſhells,	ſix ounces.
Conſerve of roſes,	half a pound
Cordial confection,	two ounces.
Cathartic extract,	half an ounce.
Extract of hemlock,	three ounces.
Extract of logwood,	one ounce.
Gentian,	five ounces.
Ginger,	three ounces.
Gum arabic,	four ounces.
Gum guaiacum,	three ounces.
Powder of jalap,	one ounce and an half.
Laudanum,	four ounces.
Lintſeed,	one pound.
Magneſia,	ſix ounces.
Manna,	eight ounces.
Whole muſtard-ſeed,	half a pound.
Myrrh,	four ounces.
Crude mercury,	two ounces.
Corroſive ſublimate,	one ounce.

Nitre,	eight ounces.
Oil of almonds,	one pint.
Caſtor-oil,	half a pint.
Lintſeed-oil,	three pints.
Eſſential oil of mint,	one ounce.
Jamaica pepper,	four ounces.
Bliſtering plaſter,	ten pounds.
Quaſſia,	eight ounces.
Salt of hartſhorn,	two ounces.
Salt of ſteel,	half an ounce.
Salt of wormwood,	ten ounces.
Caſtile ſoap,	half a pound.
Sarſaparilla,	three pounds.
Serpentary,	four ounces.
Spermaceti,	four ounces.
Rectified ſpirit of wine,	one pint.
Weak ſpirit of vitriol,	half a pint.
Spirit of Mindererus,	two pints.
Spirit of turpentine,	four ounces.
Dried ſquills,	half an ounce.
Flowers of ſulphur,	one pound.
Golden ſulphur of antimony,	half an ounce.
Cream of tartar,	one pound.
Vinegar,	ſix pints.
White vitriol,	ſix drams.
Wormwood,	one pound.
Flowers of zinc,	two drams.

As not any diſtilled waters, or tinctures, enter into the above liſt, it is intended that the former ſhould be made by the ſurgeon, with the eſſential oils, by blending a drop with an ounce of common water. The latter, or the tinctures, may be prepared on board with rum, or other ſpirits.

II. *Surgical Diviſion.*

The firſt part of this diviſion to be noticed, is the ſet of inſtruments which are ordered by the Board of Sick and Hurt, and conſiſt of the following arrangement.

A Liſt of Inſtruments, according to the New Regulations, for a Surgeon in the Navy.

3 Amputation knives,
Do. ſaw, with ſpare blade,
Metacarpal ſaw, with do.
2 Catlins,
1 Pair artery forceps, with a ſlide,
24 Curved needles,
2 Tenaculums,
6 Field tourniquets,
1 Pair bone nippers,
1 Turnſcrew,
3 Trephines,
1 Head-ſaw,
1 Lenticular,
1 Raſpatory,
1 Pair forceps,
1 Scalpel,
1 Elevator,
1 Bruſh,
2 Trocars,
2 Silver catheters,
2 Elaſtic gum ditto,
2 Dozen bougies in a caſe,
6 Scalpels,
1 Head razor,
1 Key-tooth inſtrument,
1 Gum lancet,
1 Tooth punch,
2 Tooth forceps,
6 Pewter ſyringes,
2 Seton needles in ſcales,
1 Pair curved ſciſſars,
1 Curved biſtory, with button-in handle,
1 Long probe,
1 Pair bullet forceps,
1 Scoop for extracting balls,
2 Probangs,
2 Sets of common ſplints,
1 Set of japanned, for legs,
2 Pair ditto, for thighs,
12 Rollers,
2 Eighteen tail bandages,
2 Pint Pewter ſyringes,
1 Set pocket inſtruments,
4 Lancets in a caſe.

Aſſiſtant-Surgeons to furniſh themſelves with the undermentioned.

2 Amputation knives,
1 Ditto, ſaw,
1 Metacarpal ditto, with ſpare blade,
1 Catlin,
12 Curved needles,
2 Tenaculums,
2 Tourniquets,
1 Pair bone nippers,
2 Trephines,
1 Head-ſaw,
1 Lenticular,
1 Raſpatory,
1 Pair forceps,
1 Bruſh,
1 Elevator,
2 Trocars,
2 Silver catheters,
1 Elaſtic gum ditto,
6 Scalpels,
1 Key-tooth inſtrument,
3 Spare claws,
1 Gum lancet,
1 Tooth forceps curved,
1 Ditto ſtraight,
1 Punch,
1 Seton needle,
1 Long probe,
1 Pair bullet forceps,
1 Set pocket inſtruments,
12 Lancets,
6 Pewter ſyringes.

Local Remedies.

The local applications neceſſary for ſurgical uſe are not numerous. The following liſt will be ſufficient for one year for one hundred men; and they can be increaſed in proportion to the rate of the veſſel, as the neceſſity for them is more uncertain than for the medical remedies.

	lb.		lb.
Cerate	6	Bliſter plaſter	6
Simple ointment	6	Powder of Spaniſh flies	1
Red precipitate	1	Extract of lead	4
Blue vitriol	0½	Sugar of lead	4

Sticking plaſter ſpread on cloth, tow, lint, rags, &c. at the ſurgeon's diſcretion.

The Work cloſes with the following "Liſt of Britiſh Authors on Naval Medicine and Surgery."

	When published.
Addington on Sea Scurvy,	1753
Arthry's Seaman's Medical Advocate,	1798
Atkin's Navy Surgeon,	1742
Blane on the Diſeaſes of Seamen,	1789
Blane's Short Account of Preſerving the Health of Seamen,	1792
Clarke on Diſeaſes of long Voyages,	1792
Cockburne on Sea Diſeaſes,	1736
De Monchey on Diſeaſes of Voyages to the Weſt Indies,	1762
Falck's Seaman's Medical Inſtructor,	1774
Fletcher on the Health of Seamen,	1786
Gilleſpie on the Preſervation of the Health of Seamen in the Weſt Indies,	1798
Gilleſpie's Obſervations on the Diſeaſes which prevailed on board a part of His Majeſty's Squadron on the Leeward Iſland Station, from 1794 to 1796.	1800
Hulme on the Prevention of Scurvy at Sea,	1768
Jervey on the Prevention and Cure of Scurvy,	1769
Lind on Scurvy,	1757
Lind on the Health of Seamen,	1762
Lind on the Diſeaſes of Seamen,	1774
Lind on the Diſeaſes of Europeans in Warm Climates,	1777
Macbride's New Method of Treating Scurvy at Sea,	1776
Medical advice to Maſters of Ships,	1799
Millar on Navy Diſeaſes,	1779
Milman on Scurvy,	1782
Milne's Account of the Diſeaſes that prevailed in two Voyages to the Eaſt Indies, in the Carnatic Eaſt Indiaman, during the years 1793, 94, 95, 96, 97, and 98, with Obſervations and Medical Remarks,	1803

Moyle's Sea Surgeon,	1702
Northcote's Marine Practice of Phyſic and Surgery,	1770
Paterſon on Scurvy,	1779
Renwick on Sickneſs in Ships of War,	1792
Robertſon's Account of the Diſeaſes which prevailed in two Voyages to the Weſt Indies, and Coaſt of Africa, on board His Majeſty's Sloop Weaſel, in 1769.	1779
Robertſon on Ship Fevers,	1789
Rouppe on the Diſeaſes of Seamen,	1772
Seamen's Medical Inſtructor,	1774
Ship-Maſters Medical Aſſiſtant,	1777
Stewart's Medical Diſcipline, for Preſerving the Health of Seamen in Voyages to Hot Climates,	1801
Sutton on Extracting Foul Air out of Ships,	1749
Tennant on Weſt India Diſeaſes,	1742
Thomſon on Scurvy,	1796
Trotter's Review of the Medical Department of the Navy,	1790
Trotter's Medicina Nautica,	1804
Trotter on Scurvy	1792
Waſtell's Advice to Seamen on Diſeaſes of Hot Climates,	1800
Wilkinſon's Seaman's Preſervation from Diſeaſes, &c.	1768
Winterbottom's Medical Directions for the uſe of Navigators in Hot Climates,	1803

The above liſt is the whole of the Britiſh authors who have written on naval medicine and ſurgery; and if we compare the ſmall number of them with the liſt of individuals who fill the appointments in the navy, we muſt be ſtruck with the little turn for obſervation, which has been diſplayed by ſuch a large body of practitioners.

But it may be juſtly obſerved, that great praiſe is due to the authors who have already treated on marine medicine, and the

moſt beneficial conſequences have attended their ſuggeſtions, both to the health and regulation of the navy in every reſpect. The paucity of the above liſt will be a ſtrong argument in favour of what we have formerly hinted, that each ſurgeon ſhould be obliged, as a matter of duty, to lodge, along with his journal, a detail of ſuch practical obſervations as have occurred to him worthy of notice in his routine of ſervice. How much, indeed, would it tend to the benefit of marine practice, if the ſurgeon of every veſſel in a fleet were to communicate annually his obſervations to the phyſician, and theſe being collected, that a publication ſhould be brought forward every year, under the title of Annals of Marine Medicine, particularly appropriated for the uſe and information of the ſervice.

Extemporaneous Catheter.

A caſe of ſuppreſſion of urine was read at a late meeting of the Philadelphia Medical Lyceum, by Dr. J. S. Dorſey, in which the bladder was evacuated by means of an extemporaneous catheter, deſcribed by Dr. Phyſick, in his ſurgical lectures. As this inſtrument may be found very uſeful to country practitioners, who have not always the elaſtic catheters at hand, we have been induced to copy Dr. Dorſey's account of the manner in which it is prepared.

"I took one of the ſpiral wires from my ſuſpenders, and extended it regularly, until the length was equal to that of a common bougie, taking care to preſerve a cavity in the centre. A piece of bougie plaſter, (linen dipped in melted bees-wax) was applied over this, ſo as to cover it completely; a conical point was next formed, tapering ſo as to become very ſmall at the

end, at about two inches from which, a ſmall hole was cut through the waxed linen, between the gyri of the wire. The inſtrument thus prepared was dipped in oil and very readily entered the bladder."

The introduction of a ſtilette of wire, will in ſome caſes be required, to add to the firmneſs of the inſtrument. The uſual form of the elaſtic gum catheters, having a very blunt extremity, is an inconvenience, to which the extemporaneous inſtrument above deſcribed is not liable, the form of the end may be varied as the caſe requires.

Of the Efficacy of Blood-letting in Parturition, and of a Salivation in the Pulmonary Conſumption.

WHEN your valuable letter to Dr. Miller, M. P. vol. 6. art. 5th. appeared in Maine, I took much pains to alleviate human miſery by adopting your advice. I have been fortunate in my attempts, though amidſt great oppoſition by phyſicians; but I ſoon had the females on my ſide. They now recommend blood-letting to one another, and often ſpeak of Dr. **** with gratitude. The good effects of bleeding in moſt caſes of pregnancy and parturition, are as obvious, as they are conſonant with reaſon and humanity.

When your letter to Dr. Miller, on the ſalutary effects of a ſalivation in pulmonary conſumption came into my hands, I took pains to carry it to patients, labouring under that diſeaſe, and let them read it. And I have the happineſs to inform you, that ſeveral have allowed me to give the means a trial, and that it has ſucceeded far beyond my expectations.

It has cured ſome ſtubborn local affections of the throat and lungs; greatly alleviated others of long continuance; and I am now in the uſe of it upon ſome, the favourable termination of whoſe caſes, I hope ſoon to communicate to you.

My ſucceſs has already been ſo great in the uſe of calomel, for theſe morbid affections of the lungs, that all prejudice is laid aſide againſt that truly valuable article. Patients have even called upon my pupils, who are now in the ſtudy of medicine with me, for *ſalivating pills to cure their coughs.*

Extracted from a letter of Dr. Jeremiah Barker, *of Falmouth in the Diſtrict of Maine, to* Dr. Benjamin Rush, *dated September 22d.*

Caſe of a Dolor Faciei, where the Diſſection of the Nerve had no Effect. By Dr. Kopp, *of Bayreuth.*

A Diſeaſe whoſe nature and cure in general are very problematical, deſerves the attention of every profeſſional man, particularly when the efficacy of an operation, generally believed infallible, is called in queſtion.

A lady, ſixty years old, and mother of ſeveral healthy children, became affected with the dolor faciei in a moſt excruciating manner. The ſeat of the moſt violent pain was between the eye, noſe and mouth, which increaſed periodically during ſeveral years. Beſides theſe affections, ſhe complained of a luminous ſhining in the eye, like lightning, when the pain commenced; which made it ſtill more inſupportable. She had never been affected with the gout or rheumatiſm; neither had ſhe

ever ſuſtained a leſion of the head; and no veſtige of a cancerous diſpoſition was to be perceived. The lady had taken with great patience an immenſe number of medicines; but neither hemlock, nor antimony, belladonna, &c. produced the ſmalleſt relief. A great many empirical methods had been tried without ſucceſs. The only hope reſted on the operation, the diſſection of the infra-orbital nerve. About three quarters of an inch below the lower margin of the orbita, the inciſion was made obliquely, an inch long, and quite to the bone. The ends of the infra-orbital nerve, by moving the inſtrument, were perfectly ſeparated. In the ſame manner, about half an inch from the upper margin of the orbita, an inciſion was made through the *nervus frontalis*. Both wounds were kept in ſuppuration for ſome time. The operation being performed, a ſedative and ſtrengthening medicine was preſcribed. Thirty-ſix hours after, part of the noſe, and the upper lip at the left ſide, became cold and ſenſeleſs; in the ſame manner the front towards the temples. The ſuppuration went on well. The third day after the operation the pain commenced again, but much diminiſhed. The luminous ſenſation was not perceived, and ſhe felt no pain in the teeth of the upper jaw-bone; but her hopes ſoon vaniſhed, and five months after, ſhe ſuffered as much as before, requeſting again the aſſiſtance of Dr. Kopp.

Med. and Phyſ. Jour.

Reſult of Experiments on the Torpedo.

The following reſults have been given from experiments made on the torpedo by Meſſrs. Humboldt and Luſac: 1. Though the ſtrength of the torpedo is far inferior to that of the gymnotus, it is equally capable of cauſing painful ſenſations. 2. The

gymnotus gives the moſt violent ſhocks, without any exterior movement of the eyes, the head, or the fins; but the torpedo ſuffered a convulſive movement of the pectoral fins each time it gave a ſhock. 3. The powers of theſe fiſh cannot be excited at pleaſure; they muſt be irritated before they will give a ſhock; of courſe the action depends on the will of the animal. 4. The ſhock is equally felt on touching with one finger a ſingle ſurface of the electric organs, as on applying the two hands to the two ſurfaces at once. 5. When an inſulated perſon touches the torpedo with a ſingle finger, the contact muſt be immediate, as no ſhock will be felt if a conducting body, of metal for example, be interpoſed between the finger and the organ of the fiſh; but if both hands are uſed, one touching the fiſh, and the other the metal, a ſevere ſhock will be felt. 6. The moſt ſenſible electrometer manifeſts no electrical tenſion in the organs of the torpedo, in whatever way it is applied. The leaſt injury on the brain of the torpedo deſtroys its electric powers.

Med. and Phyſ. Jour.

Of the Identity of the Electric Fluid, whether produced from Glaſs or reſinous Bodies.

M. Bienvenu, a French experimenter in philoſophy, thinks he is able to demonſtrate, that, contrary to the common opinion, glaſs and reſinous bodies produce the ſame kind of electricity; and that the difference obſerved depends, not upon the glaſs or roſin, but upon the nature of the rubber. He excited an electrophorus of roſin with the ſkin of a cat, and it ſhewed negative electricity; another electrophorus made of glaſs, when rubbed with the ſame ſkin, exhibited the ſame electricity as the former. This experiment proves, that, if the conductor of an

electrical machine gives out conſtantly electricity of the poſitive kind, it is owing to the cuſhion being made of morocco leather; this having the property of developing the electricity of the glaſs, which communicates to the conductor poſitive electricity. In order to prove this, he ſubſtituted for the cuſhion of leather one made of the ſkin of a cat: it was then found that the glaſs was electrified negatively; and the conductor, furniſhing it with the electricity it had loſt, ſhewed alſo negative electricity. This fact is of ſome importance to the theory of electricity.

Med. and Chir. Rev.

On the Anti-putrefactive Property of Arſenic.

Profeſſor Pfaff, of Kiel, having been called to open the body of a perſon poiſoned with arſenic, found that though it had lain 18 days in the grave, putrefaction had not made any perceptible progreſs. This induced him to undertake an inveſtigation thereof in a chemical point of view. From a compariſon of the phenomena he here found, with thoſe recorded in the works of other writers, he drew the concluſion, that arſenic, even when it remains a conſiderable time in the ſtomach, is not perceptibly diſſolved, but if it has been adminiſtered in ſubſtance, is again found there in that ſtate, with hardly any loſs, provided it has not been thrown up whilſt the patient was alive. On the whole, it appears that arſenic is in a high degree inſoluble; that of a large quantity left ſeveral weeks in contact with water, which was frequently poured over it, no evident ſolution took place. Of all the reagents or teſts of its preſence, he found water impregnated with ſulphurated hydrogen gas the moſt active, inſomuch that the preſence of arſenic diffuſed in 60,000 times its weight of water was ſtill betrayed by the well

known yellow colour. The profeſſor conſiders a peculiar corrugation of the heart, eſpecially on its anterior ſurface, as the ſureſt ſign of death having been cauſed by this poiſon.

Med. and Phyſ. Jour.

Whether Senſation remains after Decollation.

This queſtion having been lately agitated at the Society of Medicine of Paris, upon the reading of a Memoir preſented to the ſociety by M. Calabre, it was attempted to elucidate it by direct experiment. M. Dupuytren demonſtrated, that, upon the diviſion of the cervical vertebræ in dogs, winking might ſtill be excited in them, for the ſpace of a minute, upon bringing any body ſuddenly before the eye. But in this caſe, the brain was ſtill excited by the appulſe of blood; a circumſtance which does not take place in decollation. The experiment, therefore, cannot be conſidered as concluſive.

Med. and Chir. Rev.

Fluoric Acid in the Enamel of Teeth and in Ivory.

Gay Luſſac has made further experiments relative to the diſcovery of Marechini, of fluoric acid in the enamel of the human teeth and in ivory. He found that the whole maſs of ivory, and not merely the enamel, contains fluoric acid. He obtained the ſame reſult from experiments with foſſile ivory and the tuſks of the wild boar. It is a remarkable fact, that as in the teeth the fluoric acid occurs in combination with the phoſpho-

ric acid, the phoſphat of lime brought from Eſtremadura contains likewiſe fluat of lime, and that the earth brought from Marmoreſch conſiſts of much fluat of lime.

Med. and Phyſ. Jour.

Curious Phenomenon of Human Structure.

There at preſent lives at *Void*, a town in France, in the department of the *Meuſe*, a perſon poſſeſſing a ſurpriſing ſingularity of ſtructure and functions. His name is *Claude Rouget*; he is near ſixty years of age, and enjoys good health, though deprived of the uſual way of paſſing his excretions, the mouth ſerving, by turns, the purpoſes of maſtication and dejection. Deficient nearly in all the lower parts of the body below the buſt, he is fixed on a ſmall carriage, which the children amuſe themſelves by drawing from place to place through the ſtreets, where he ſolicits public charity.

When very young, he ſuffered a gradual and long-continued compreſſion of the whole abdomen, ſo as ſeemingly to obliterate all the viſcera, as the inteſtines, liver, ſpleen, kidneys, bladder, pancreas, and meſentery, and all the excretory organs. The belly appears agglutinated, as it were, to the ſpine; the inferior extremities are waſted away, and the anus totally obliterated. This unfortunate being continues his exiſtence by means of the glands of the ſtomach, which abſorb a minute portion of chyle diluted by the ſalivary and gaſtric juices. In leſs than a quarter of an hour after taking food, he returns it again by the mouth, in the form of a thick emulſion, with as much or more eaſe than he could do it by the natural paſſage. This quick return of the food obliges him to eat at very ſhort intervals.

Med. and Chir. Rev.

On the Abſorption of Azotic Gas in Reſpiration.

Profeſſor *Pfaff*, of *Kiel*, has been lately engaged in making a number of intereſting experiments on reſpiration, which tend not a little to elucidate that important function. The abſorption of oxygen in the lungs, and its influence on the production of animal heat; the formation or expulſion of carbonic acid gas in reſpiration; were circumſtances that had been long known, and explained with tolerable accuracy. The part which azote performs in the proceſs is a more recent diſcovery. Goodwin thought he had obſerved a conſiderable abſorption of azotic gas in reſpiration; but his experiments on the ſubject were not deciſive, and were conſequently diſregarded. The late more accurate experiments of Mr. Davy put the fact beyond doubt; and, if any confirmation of it were wanted, it is furniſhed by the experiments of M. Pfaff, here alluded to.

There ſeems no reaſon to doubt that azotic gas performs ſome important office in reſpiration, which, however, we are not at preſent able to aſſign with any certainty. It is not improbable that it promotes the decompoſition of the oxygen in the lungs or blood-veſſels, from this circumſtance, that it was found by the celebrated Lavoiſier that much more oxygen was decompoſed in the ſame time by reſpiring atmoſpheric air, which is a mixture of oxygene and azote, than by breathing of pure oxygen gas. This curious fact is analogous to another, namely, that the ſlow combuſtion of phoſphorus does not go on in oxygen gas, unleſs there is preſent at the ſame time a portion of azotic gas, as in the compoſition of the atmoſphere. The azote abſorbed during reſpiration alſo enters, probably, into the compoſition of the fluids, and ſerves to render them more highly animalized, or azotized. In this way we may account for

the transformation of chyle into blood, during its paſſage through the lungs.

Med. and Chir. Rev.

On a Caſe of Premature Delivery, by Mr. Simmons.

Practitioners have hitherto confined themſelves to the exciting of premature delivery, to ſuch caſes of diſtortion of the pelvis as had previouſly been conſigned to the uſe of the crotchet. This important fact was firſt promulgated by Mr. Barlow, of Bolton, (Med. Facts and Obs. vol. viii.) and it has ſince been confirmed by the experience of Mr. Hardman, of Mancheſter, (Medical and Phyſical Journal) and is now I believe pretty generally followed as a rule of practice in ſuch caſes. The preſervation of the child is obviouſly the primary object for the bringing on of premature labour in the diſtorted pelvis; yet, if the ſafety of the mother, under particular circumſtances, without diſtortion, ſhould require ſimilar means to be employed, with ſafety to the child, ſurely no good reaſon can be aſſigned why they ought not to be adopted. On this untrodden field I have lately ventured, and with a reſult entirely ſatisfactory.

Mrs. W——, a woman of a delicate habit of body, and the mother of many children, had, during all her former pregnancies, been much troubled with ſickneſs and vomiting, and contrary to what uſually happens, both theſe ſymptoms had rather increaſed than diminiſhed, after quickening, and continued until ſhe was brought to bed.

Before this laſt pregnancy, ſhe had not lain in of ſix years; yet even this long interval had produced no beneficial change in her conſtitution, for the former ſymptoms of ſickneſs and

vomiting recurred, and with increaſed violence. I was firſt requeſted to ſee her when ſhe was about ten weeks off the full time; a cough, from which ſhe was ſeldom free, was then much aggravated by a ſevere cold which ſhe had caught; her ſtomach was in ſo irritable a ſtate as to retain ſcarcely any thing taken into it, and ſhe was tormented beſides with an almoſt inceſſant cardialgia. For the cardialgia ſhe had had frequent recourſe to magneſia ſuſpended in ſimple water, which gave ſome relief at the moment, and uſually ſtaid with her, but by the frequency of its repetition its laxative effect had proved conſiderable, and contributed very much to reduce her.

In the courſe of my attendance ſhe took the carbonic acid gas, either in the efferveſcing draught, or as combined in Henry's ſoda water; lime and mint-waters, with and without columbo, abſorbent and aromatic powders, the aqua kali and other remedies; the ſtomach was embrocated with opiate and aromatic embrocations; and recourſe was alſo had to bliſters. Opium in a ſolid form was the only medicine from which ſhe experienced any relief; and latterly the tincture of opium was adminiſtered by way of glyſter. Nevertheleſs, the irritability of the ſtomach went on increaſing, and even a ſingle grain of ſolid opium was at length rejected, ſo that no food could be retained to ſupply the natural waſte of the body.

In this ſtate of the caſe, I appriſed both her and her friends, that the only hope of her recovery reſted on the bringing on of premature labour, the particulars of which I endeavoured, by explanation, to render intelligible to them. While they were coming to a determination upon the ſubject, nutritious and opiate enemas were injected, and baths of milk were applied to the lower extremities. However, they all ſoon became impatient, and even urgent for her to ſubmit to my propoſal; convinced that her exiſtence muſt be ſhort, unleſs ſhe could thus obtain relief.

Upon this ſolicitation, ſix weeks from her full time, about eight o'clock on the evening of the 24th of March, 1806, I ruptured the membranes, an event which was denoted by the uſual ſign; at ſix in the evening following, ſhe was taken in labour; and, at ten the ſame evening, ſhe was delivered of a living child, after a labour, the other parts of the proceſs of which were natural and eaſy.

From the time of her delivery, the ſickneſs gradually abated, and ſhe was enabled to retain ſome food upon her ſtomach; with the aſſiſtance of opium, her complaints by degrees left her; and, though ſtill delicate, ſhe is nearly reſtored to her former ſtate of health. The child is ſtill alive, and likely to live.

The principle of exciting premature delivery being once received, it may be eaſily transferred to other caſes than thoſe of diſtortion. In the preſent inſtance, the experiment has been fully juſtified, not only by the ſaving of the child, but by the preſervation of the life of the mother, for which indeed it was here inſtituted. But notwithſtanding my ſucceſs in the preſent caſe, and my ſenſe of duty to repeat the experiment under ſimilar circumſtances, I cannot too earneſtly proteſt againſt the haſty adoption of ſuch a meaſure. Language can ill convey a proper ſenſe of my anxiety pending the deciſion; and I do entreat that it may be carried into effect only upon the moſt urgent neceſſity to preſerve life, and after the moſt mature deliberation. *Med. and Phyſ. Jour.*

Edwards's Caſe of Scurvy, cured by the Arſenical Solution; addreſſed to the Editor of the Medical and Phyſical Journal.

GENTLEMEN,

The following caſe of inveterate ſcurvy came under my notice; and as I long wiſhed to give a fair trial to the arſenical ſo-

lution in ſuch caſes, I conceived this to be a favourable opportunity; the reſult is ſtated exactly as it occurred, and if my feeble efforts can, in any ſhape, advance medical ſcience, they will be exerted with that view, ſubmitting with all deference to your better judgment ſuch caſes as may appear to carry any importance, as new, either in their nature or cure.

The ſubject of this caſe, is the cook of a gentleman in this city, (Bath) a woman about the age of 50. She has been ſubject to ſcurvy many years, which commenced in the palms of her hands, and gradually extended over her hands and arms, and partially in other parts of the body; but the hands and arms appear to be primarily and moſt materially affected, ſo much ſo, as to ſtiffen and partially contract the joints of the fingers and elbows.

Her mind dwelt ſo much on the diſagreeable nature of the diſeaſe, as to occaſion her general health to decline; her habit of body was coſtive, with loſs of appetite; ſymptomatic fever, characteriſed by a ſmall quick pulſe, conſtant thirſt, white tongue, and frequent inclination to vomit. She had tried many regular profeſſional men in this city and elſewhere, as alſo the uſe of our baths, and many of the noſtrums advertiſed for the cure of ſuch complaints, but in vain. The diſeaſe evidently appeared to gain ground, by rendering her leſs capable of uſing her hands and arms. In this deplorable ſtate, ſhe applied to me on the 6th of January laſt. In the firſt place I deemed it prudent to detach her mind from ſo forcibly dwelling on her diſeaſe, or rather deſpairing of relief: after which I diminiſhed the prevailing ſymptoms of fever, by firſt ordering an emetic, and afterwards a briſk aperient, as the chylopoetic viſcera appeared deranged. The emetic and aperients had the effect of reſtoring the ſtomach and bowels to a healthy ſtate; ſmall doſes of antimonial powder, joined with nitre, were continued till her health was materially mended.

On the 24th of January I ordered her the mineral ſolution, beginning with gtt. vj. bis die, in decoctum ulmi, increaſing one drop per diem, provided nauſea was not cauſed.

This plan was ſtrictly adhered to, and at the end of a week I ſaw her, and found that the diſeaſe evidently was yielding, and the general health mending, an increaſe of appetite, and undiſturbed ſleep. She continued the ſolution for a month, and had increaſed the doſe to gtt. xxx. bis die; at the end of which time I ſaw her comparatively well; the blotches in her hands, and different parts of the body, were not only gone, but the flexibility of the joints perfectly reſtored. Animated by the hope that ſhe ſhould obtain a perfect cure, ſhe was anxious for more of the drops; continuance was ordered, but not an increaſe, becauſe I found that her health was perfectly re-eſtabliſhed, and the diſeaſe nearly eradicated, therefore I judged it prudent not to puſh the remedy farther.

She continued taking 30 drops till the 14th of May, when ſhe expreſſed herſelf deeply indebted to me for her cure, and for the enjoyment of health, which ſhe had not experienced for upwards of 30 years; and I am happy to ſay, that the ſkin, even the parts moſt ſeverely affected, does not bear a trace of any diſeaſe, and that ſhe is perfectly reſtored to health.

I have frequently given it in tertian intermittents with ſucceſs, and in caſes of ſcurvy; but of its ſpecific qualities in this kind of eruption I never before was ſo well ſatisfied.

The antiſcorbutic properties of this mineral claims the attention of medical men, in order to diſcover its further effects in the cure of ſuch diſeaſes.

It appears to me, that the attention ſhould be firſt directed to the ſtate of the general health, before the adminiſtration of

the ſolution, otherwiſe, the indiſcriminate uſe without judgment, might not only not anſwer the intended end, but prove dangerous to life itſelf.

Med. and Phys. Jour.

Of the State of Medicine in Portugal. By J. Adams, M. D.

" Dear Sir,

" As you expreſſed a wiſh to know the ſtate of medicine in Portugal, I have ſent you all that I could collect on the ſubject in one of her colonial ſettlements.

" Throughout the extenſive dominions of Portugal, no one practiſes any branch of medicine without a licenſe. The midwives (this branch of medicine is in all common caſes confined to women) and the barbers are all licenſed: the latter are the tooth-drawers, bleeders, and practitioners in ſmall ſurgery, as well as ſhavers. In the country they are alſo practitioners in medicine, taking for their aſſiſtance ſuch preſcriptions as they become poſſeſſed of from the phyſicians who are occaſionally called to viſit the wealthier inhabitants of their diſtricts. Of late years they have been further inſtructed by a tranſlation of Buchan's Domeſtic Medicine. No perſon can practiſe any two of the branches united. The phyſicians muſt all be graduates of ſome univerſity; ſuch as have graduated in Coimbro' are licenſed to practiſe *extra muros* on a bachelor's degree. This is, probably, the origin of the *extra licentiates* of the London College.

" The Archiatros, or proto-medicato, reſides in Liſbon, and licenſes all the practitioners of his diſtrict; he alſo appoints a

Medico-mor, or chief phyſician, for every diſtrict in the kingdom and its colonies. It is the buſineſs of this officer to make regular reports of all the practitioners of every deſcription in his diſtrict to the Archiatros.

"By an order from the crown, every phyſician muſt write his preſcription in the Portugueſe language; a very neceſſary precaution, in a country where the apothecaries are often ſo ill educated; for, never being expected to do any thing out of their ſhops, their whole attention is confined to the ſubjects of pharmacy.

"The fee of a phyſician, when he gives advice at home, is fixed at little more than a ſhilling: if the patients chuſe to offer more, he is at liberty to receive it, but cannot refuſe his advice for the above ſum. For viſits abroad, the pay depends upon the liberality of the patient, or the demands of the phyſician. All families of any conſequence conſider their phyſician and lawyer as a part of their eſtabliſhment, and pay them annually a certain ſum, according to the rank the family aſſumes. If, however, more than ordinary attendance is required, an additional gratuity is expected.

"If a phyſician diſpenſes his own medicines, or an apothecary preſcribes, either is liable to puniſhment: but the Medico-mor muſt report to the Archiatros, and the Archiatros appeal to the civil officer of the diſtrict; the phyſician of the diſtrict having no other power than to enforce his injunction in the firſt inſtance.

"Perhaps if there is any profeſſion, the practitioners of which ſhould be reſtrained, it is medicine; and if any reſtraint is required, it is not eaſy to find one more unexceptionable than the above. In the preſent ſtate of England, many objections to adopting it will occur; becauſe the apothecaries from being

expected to practiſe, have generally qualified themſelves for that purpoſe; and moſt of them, likewiſe, by a prejudice which ſeems unfortunately gaining ground, are expected to practiſe midwifery.

"The Medico-mor has not only this power over the practitioners in his diſtrict, but, in diſputes between the patient and his medical attendant of any deſcription, he can decide in the firſt inſtance, if the caſe comes within the ſcope of a written law. A ſurgeon made a claim on his patient on account of a contract entered into between them, that the cure ſhould be performed for a certain ſum, provided the patient rigorouſly complied with the rules laid down. A part was advanced. The patient, finding himſelf no better, grew tired of his reſtraint and of his ſurgeon. The latter demanded the remainder of the ſtipulation, urging that he was ready to fulfil his part of the contract, and threatening a legal proceſs. The Medico-mor, hearing of the tranſaction, not only ordered the law officer to prevent the patient from paying more, but that the ſurgeon ſhould refund the firſt ſum, becauſe the whole contract was illegal.

"Theſe, Sir, are all the particulars which at preſent occur to me on the ſtate of medicine in Portugal. If they contain any hints that may be uſeful in the preſent important diſcuſſion, they are at your ſervice." *

Med. and Chir. Rev.

* This refers to the attempt at a medical reform in Great Britain.

Caſe of Fracture cured by the Uſe of Nitric Acid. By Dr. PENEL *of Abbeville.*

An elderly man, whoſe left thigh had been fractured obliquely, at its inferior part, was received into the Civil and Military Hoſpital at Abbeville. The reduction of the fractured bone was eaſily obtained, and the ſymptoms ſoon diſappeared. On the fourteenth day, when the dreſſings were removed, the parts appeared in a good ſtate; the following morning, however, the patient complained very much of his thigh, although the fracture ſeemed not to be deranged. On the nineteenth day the bone was ſlightly ſwollen; the callus appeared to get more conſiſtency; but the fever continued. On the 27th day, Dr. Penel, having removed the dreſſing, perceived more evidently the ſwelling of the bone; and the callus exhibiting ſome inequalities, cauſed him to ſuſpect the preſence of a morbid poiſon. About this time, the Peruvian bark and antiſcorbutic remedies were employed, but without the intended ſucceſs. On the 40th day the bone appeared ſtill more tumid; the callus preſented a conſiderable tumour, which appeared ſolid. The dreſſings were now entirely removed, and the limb laid on a bolſter; after which the patient found himſelf better; but, on a ſudden, the muſcles contracted, the callus was deſtroyed, and the whole member ſhortened; and it was neceſſary to make a forced and laſting extenſion, in order to reduce it to its former length. Dr. Penel obſerving that the urine depoſited a conſiderable quantity of a greeniſh ſubſtance, found it, on examination, to be phoſphat of lime. The ſwelling of the limb diſappeared a few days after, and the fracture ſeemed again to conſolidate; the urine, however, remained the ſame, and was paſſed in a greater quantity; the febrile motions continued, but the ſwelling of the bone was not augmented. Two months after the fracture, the callus appeared

again ſolid, and Dr. Penel continued the dreſſings 20 days longer; but they were ſcarcely removed, when the patient found himſelf unable to ſtand, and perceived the ſame ſymptoms as at firſt. On viſiting him, two days after, the extremities of the fracture ſeparated, and the author was obliged to undertake the reduction a third time. He now determined to give the patient, internally, nitric acid, which he accordingly took, in a doſe of one demi gramme per day (about ʒſs) diluted in a kilogramme of water (about lb ij). The urine became clearer, the fever ceaſed, and, eight days afterwards, the patient found himſelf ſo well, that he deſired the dreſſings might be removed; this requeſt, however, was not complied with, till the fourth month after his firſt reception, when he left the hoſpital, as he could walk with great eaſe, and without crutches.

Med. and Phys. Jour.

Goetling's improved Preparation of Kermes Mineral.

Reduce ſeparately to powder, and afterwards mix ſixteen parts of crude antimony, twenty-four parts of purified potaſh, and three parts of flowers of ſulphur; introduce the mixture into a crucible, and let it enter into complete fuſion. After it has cooled, pulverize the maſs, and boil it for half an hour in one hundred and twenty-eight parts of water; filter it while boiling through a thick cloth, letting it run into an earthen pan containing one hundred and fifty ſix parts of water, and leave it expoſed to the air, in a ſhallow veſſel, for two or three days, or until particles of a bright orange colour appear on its ſurface. Afterwards decant the liquid, waſh the depoſit in a large quantity of water; then remove it on a filter, and complete the edulcoration; when this is done, dry it by a gentle heat.

This proceſs yields twelve or fourteen parts of Kermes mineral of a fine reddiſh brown colour; the whole quantity of antimony, except a trifling reſiduum of extraneous matter, is diſſolved and converted into Kermes, and only a very ſmall quantity remains in the decanted liquor, in the form of golden ſulphur.

Med. and Phyſ. Jour.

Purification of Water.

A member of the ſociety of ſciences and belles-lettres at Douy, has lately publiſhed a ſimple proceſs for purifying water. He takes a common garden pot, in the middle of which he places a piece of wicker work; on this he ſpreads a layer of charcoal of four or five inches in thickneſs, and above the charcoal a quantity of ſand. The ſurface of the ſand is covered with paper pierced full of holes, to prevent the water from making channels in it. This filter is to be renewed occaſionally. By this proceſs, which is at once ſimple and economical, every perſon is enabled to procure pure limpid water at a very trifling expenſe.

Med. and Phyſ. Jour.

DEATHS.

Doctor John Church, of Philadelphia.

Benjamin Bell, Eſq. Member of the Royal College of Surgeons of Ireland and Edinburgh; the well-known author of ſeveral valuable works on Surgery, &c.

MEDICAL AND PHILOSOPHICAL REGISTER.

FOREIGN AND DOMESTIC.

BENNION, *on the Gibraltar Fever.*

Windsor, July 4, 1805.

SIR,

THE enclosed letter from Thomas Bennion, Esq. Garrison Surgeon of Gibraltar, I received two days ago. We have had but very scanty accounts of the disease which so fatally raged there; this account therefore, though imperfect, may perhaps be acceptable. An account from Mr. Bennion must be particularly interesting, as he was surgeon of the 10th Regiment while the disease raged, and it will be recollected that the mortality in that regiment was so very much smaller than in any other corps in the garrison. See the account published in the Medical and Physical Journal, by the Ordnance Surgeon at Gibraltar.

I am, &c.

JAMES M'GRIGOR.

DR. BATTY.

Gibraltar, April 8, 1805.

SIR,

The Garrison is now perfectly clear of that cruel disease which proved so fatal both to the soldiers and to the inhabitants here. You ask me, what the disease is, or to what class it belongs? I

This proceſs yields twelve or fourteen parts of Kermes mineral of a fine reddiſh brown colour; the whole quantity of antimony, except a trifling reſiduum of extraneous matter, is diſſolved and converted into Kermes, and only a very ſmall quantity remains in the decanted liquor, in the form of golden ſulphur.

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SIR,

THE encloſed letter from Thomas Bennion, Eſq. Garriſon Surgeon of Gibraltar, I received two days ago. We have had but very ſcanty accounts of the diſeaſe which ſo fatally raged there; this account therefore, though imperfect, may perhaps be acceptable. An account from Mr. Bennion muſt be particularly intereſting, as he was ſurgeon of the 10th Regiment while the diſeaſe raged, and it will be recollected that the mortality in that regiment was ſo very much ſmaller than in any other corps in the garriſon. See the account publiſhed in the Medical and Phyſical Journal, by the Ordnance Surgeon at Gibraltar.

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JAMES M'GRIGOR.

DR. BATTY.

Gibraltar, April 8, 1805.

SIR,

The Garriſon is now perfectly clear of that cruel diſeaſe which proved ſo fatal both to the ſoldiers and to the inhabitants here. You aſk me, what the diſeaſe is, or to what claſs it belongs? I

have never been in the Weſt Indies, or on the continent of America, I conſequently cannot poſitively ſay that it was the yellow fever; but it appeared to me, to be that very diſeaſe as deſcribed by authors, particularly by Dr. Chiſholm. It likewiſe often appeared in the ſhape of a diſeaſe which you and I ſaw often in Egypt, the plague; but I ſhall give you ſome deſcription of it, and will divide the ſymptoms as they appeared, into two ſtages.

In the firſt, the patient is ſeized without any previous notice, with giddineſs, pain of the head, ſlight ſickneſs at ſtomach, darting pains from the head to the back, and ſpaſmodic affection of the calves of the legs. Sometimes there were rigors, and in ſeveral caſes the ſickneſs at the ſtomach did not come on for ſome hours after the firſt attack. The breathing was very hot, there was inceſſant ſighing, the greateſt dejection of ſpirits, with apprehenſions of the moſt diſtreſſing nature. The patient ſaid he felt as if ſeverely beaten; the fear of death is very great, and friendſhip for the neareſt kin is extinguiſhed. The tongue was at the beginning very white; a bad taſte was complained of; the ſenſe of ſmelling was imperfect or depraved; the viſage was extremely diſtreſſed; there was an unwillingneſs to ſpeak, a deſire to remain in a horizontal poſture, and great tottering on any attempt at motion.

The countenance on the firſt attack became ſuddenly ſallow; in the courſe of a very ſhort time however it became red, full, and bloated, with the exact appearances of intoxication. Drowſineſs and ſleep followed in a few hours, when a little moiſture came out on the ſkin; this appearance at this ſtage was however deluſive, and often deceived the practitioner. It ſuddenly left the patient, and was ſucceeded by the moſt intenſe heat, that gave a ſmarting ſenſation to the fingers when applied to the ſkin. There was at this time a moſt uncommon and offenſive ſmell from the whole body. The eyes were now much in-

flamed, there was violent pain in the temples and over the arches of the eye-brows, darting to the orbits.

The pulſe from firſt to laſt was greatly increaſed in quickneſs; in ſome it was rather hard, though in more it was ſmall and ſoft, and never ſo ſtrong and firm as in inflammatory diſeaſes.

The thirſt was leſs than it is generally in acute diſeaſes. There was a ſtrong pulſation of the carotid arteries, and an evident enlargement of the jugular veins.

The colour of the ſkin at firſt approximated to that of the lilac, cocklicoque, violet or poppy, and changed as the diſeaſe advanced to a deep dark yellow. By the adminiſtration early of ſtrong emetics and purgatives on the firſt attack, the yellowneſs ſeldom appeared, and every other bad ſymptom was averted.

When theſe had not been exhibited; and in ſome caſes, where the diſeaſe from firſt appeared in a more aggravated form, the ſecond ſet of ſymptoms, or what I called the ſecondary, ſoon appeared; the patient was very comatoſe, there was much tremor of the limbs, frequently an inceſſant vomiting of a black matter, with a convulſive hiccup. The eyes were drawn in a direction alternately from the noſe to the temples in the moſt frightful manner, with nearly a total blindneſs.

The ſkin was now parched up with a burning heat, or covered with a clammy offenſive ſweat.

The body was covered with petechiæ and vibices, ſwellings appeared under the arm-pits and groins, which frequently de-

Ross, *on the Gibraltar Fever.*

London, Auguſt 10, 1805.

Sir,

The encloſed extract of a letter from Thomas Roſs, Eſq. Surgeon to the forces at Gibraltar, gives ſome further account of the fever which raged ſo fatally there. I only regret that the account is ſo ſhort from Mr. Roſs, who is ſo well qualified to have given a longer and more complete one. Mr. Roſs, from twenty years experience of fever in the Eaſt and Weſt Indies, China, Egypt, and Gibraltar, could have given ſome valuable remarks and compariſon of fever as appearing in theſe various regions.

Yours, reſpectfully,

JAMES M'GRIGOR.

Dr. Batty.

Symptoms of the Fever which prevailed at Gibraltar in September, October, November and December, 1804.

It commences with the uſual ſymptoms of fever; ſometimes vomiting with the cold fit, but not always; when the hot fit comes on there is a violent pain in the head, chiefly acroſs the forehead, throbbings of the temporal and carotid arteries; the eyes inflamed and watery; from the diſtention of their ſmall veſſels with blood, they have the ſenſation of being ſwollen, and give pain when moved; there is violent pain in the loins and calves of the legs; the face is fluſhed: the ſkin hot and dry, and when felt leaves a burning ſenſation at the fingers-end for ſeveral ſeconds; there is great proſtration of ſtrength, and generally anxiety and depreſſion of ſpirits; but in ſome in-

ſtances there is the greateſt unconcern and indifference as to their ſituation, from which circumſtance the patients were frequently loſt, by not reporting themſelves in time to be benefited by medicine. The tongue in general was white and moiſt, ſometimes perfectly clean, ſometimes the centre was white, the point and ſides clean, red, and ſhining; the thirſt in ſome caſes was very great, while ſome had no thirſt; the urine was high coloured; the bowels in general coſtive, but when they were not ſo, or when purgatives were given, the ſtools were uncommonly fetid; little reliance could be put on the pulſe as to ſtrength or quickneſs; in ſome it exceeded 130 in a minute, and in others it did not exceed 60 during the whole courſe of the diſeaſe. The eye was by much the beſt index to be guided by. Theſe were the ſymptoms of the firſt ſtage of the diſeaſe, which, if not relieved by nature, (which was very ſeldom the caſe) or by medicine, in twenty-four hours, the eyes became more ſuffuſed and dull, the heat of the ſkin continued, and all the other ſymptoms increaſed till about the end of the ſecond day, when a dull heavy pain was felt at the pit of the ſtomach, which was ſoon followed by an effort to vomit; the dullneſs of the eyes continuing to increaſe and aſſuming a dirty yellow glaſſy appearance, which peculiar appearance was always a fatal ſymptom. The patient now becomes very reſtleſs and delirious; the ſkin puts on a ſlight yellow tinge, beginning about the neck, and which in a few hours changes to a dull yellow livid colour; the irritability of the ſtomach continues, and every thing is rejected; the vomiting becomes conſtant; what is brought up is a dirty browniſh coloured liquor like the waſhings of Port wine bottles; it gets darker and thicker, and has now more the appearance of coffee-grounds; the deſire for cold water now comes on, the reſtleſſneſs increaſes, and frequent attempts are made to get out of bed; the delirium is generally expreſſed in mutterings, but ſometimes the convulſions are violent and the ravings frantick; the urine is ſecreted in ſmall quantity, and ſometimes all ſecretion is ſuſpended; inva-

riably a fatal ſymptom, and which in ſome inſtances occurs early in the fever. Caſes have occurred in which not a drop of urine has been paſſed during the whole courſe of the diſeaſe, yet theſe patients rarely complained of any inconvenience in conſequence. Petechiæ now appear about the breaſt and arm-pits, and then ſpread over the whole body; the vomiting continues, attended with hiccup, and a cold, greaſy, clammy moiſture on the ſkin, of a peculiar and cadaverous ſmell; the yellow colour of the countenance acquires a darker hue, and it is ſtrongly marked by the expreſſion of horror; ſometimes there are tremors and convulſive motions of the eyes and muſcles of the face or limbs; conſtant muttering; partial intervals of recollection, during which the patient ſeems ſenſible of his ſtate, and approaching diſſolution, although unable to expreſs himſelf in words; the extremities are cold; the pulſe ſinks; and on the third, fifth, or ſeventh day he dies; in ſome inſtances the whole train of ſymptoms were run through and terminated by death in thirty-ſix hours from the firſt attack.

This diſeaſe frequently ran quickly on to the putreſcent ſtate, when the tongue was covered with a dark brown cruſt; no thirſt; early delirium; the ſkin ſoft, of a dirty yellow colour, and in point of temperature below the natural ſtandard; profuſe cold clammy ſweats; very fœtid ſtools; tenſion of the abdomen; hæmorrhages of a very dark colour from the noſe, mouth, ſtomach, and anus; livid petechial eruption, black vomiting, hiccup, coma, death.

Sometimes the black vomiting and all the other ſymptoms ſubſided, the ſecretions and pulſe appeared natural, the ſtomach became perfectly retentive both of medicines and nouriſhment, the ſenſes perfectly collected, the ſpirits revived, and the patient appeared confident of recovery, and continued ſo for one or even two days; and when there was every reaſon to think all danger paſt, he ſuddenly, and when leaſt expected, ſunk,

and expired without a groan or ſtruggle. There is one thing to be obſerved, that when theſe illuſive appearances took place, the eye ſtill retained its inflamed and glaſſy appearance.

Med. and Phyſ. Jour.

THOMAS, *on the Gibraltar Fever.*

The diſeaſe is the Typhus gravior, or jail, or malignant fever.

Great preceding heats, a numerous population in confined ſituations, and ſmall houſes, inattention to proper cleanlineſs, and a free ventilation, a neglect of ſeparating the infected from the healthy, and of cutting off all unneceſſary communication between them, and no efficacious means having been early reſorted to for ſubduing or eradicating the contagion, this fever has now acquired a degree of virulence and malignity equal to the plague itſelf.

This diſorder is highly contagious; as all fevers of the typhoid kind are univerſally admitted to be capable of being propagated from one individual to another, either by contact or by inhaling the effluvia ariſing from the body of a diſeaſed perſon, or from linen clothes and other articles, ſtrongly impregnated with their miaſma.

Univerſal wearineſs, faintneſs, great depreſſion of ſtrength, ſevere pains in the back and head, particularly in the forehead and ſockets of the eyes; rigors ſucceeded by univerſal heat; thirſt, a parched tongue, ſomewhat covered with a brown fur; nauſea, with now and then a vomiting of bilious matter; coſtiveneſs, laborious reſpiration, accompanied with deep ſighing;

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a ſmall but quick pulſe, of from 100 to 140 in a minute; ſlight wanderings, incoherency and coma, are the moſt uſual ſymptoms attendant on this fever; but in its very advanced ſtate, thoſe of putreſcency are obſervable. In ſome caſes, the patient will die on the fourth day.

By the following mode of treatment, I have never loſt a patient, where my advice has been applied for early.

If the perſon is incommoded by nauſea or vomiting, on his ſeizure with this fever, I would recommend the contents of the ſtomach to be evacuated, by directing him to drink a few cups of a ſtrong infuſion of camomile flowers, in preference to his taking an emetic, either of ipecacuanha or tartarized antimony; which ſeem inadviſeable, from the great irritability of this organ, which is apt ſpontaneouſly to enſue. If nauſea does not prevail, then the firſt ſtep to be adopted, ſhould be to clear the bowels of all feculent matter, by a ſufficient doſe of calomel; the operation of which may be rendered more certain and quick, by an addition of a few grains of coloquintida.

The bowels being cleanſed, I adviſe an immediate uſe of the muriatic acid. To adults, we may give ten or twelve drops at firſt, which doſe ſhould be repeated every four hours, guarded by four or five drops of the tincture of opium, to prevent the acid from acting unpleaſantly on the ſtomach and inteſtines. By degrees, we may increaſe the quantity of the acid in each doſe to eighteen or twenty drops, employing as a vehicle, about an ounce and a half of a ſtrong infuſion of columbo: the effect of mineral acids, but more particularly the muriatic, in all fevers of a malignant nature, is truly great; and from employing it in all ſuch caſes, my practice has been marked with the moſt decided ſucceſs. To increaſe the antiſeptic effect of this medicine, as well as to obviate debility, I always recommend a quantity

of wine, proportionable to the age of the patient, and the exigency of the caſe, to be adminiſtered at the ſame time. Bleeding ſhould never be uſed; as the Spaniſh phyſicians, at Malaga, ſacrificed moſt of their patients by it.

At a very early period of the diſeaſe, when the rigors have ceaſed, and the ſkin is become dry and hot, I ſtrongly adviſe a general affuſion of the whole body with cold water, as recommended by Dr. Currie, of Liverpool; and ſince practiſed by myſelf, and many other phyſicians, in innumerable inſtances, with the happieſt effect. This remedy may be repeated twice or thrice in the courſe of the twenty-four hours; but it ſhould be at thoſe periods when there is no great ſenſe of chilliness preſent, when the heat of the body is ſteadily above the natural, and when there is no general or profuſe perſpiration. Where either the delicacy of the ſyſtem, the apprehenſions of the patient, or the prejudices of the bye-ſtanders, prevent the employment of cold affuſion, we muſt be content to ſubſtitute tepid affuſion for the more powerful remedy. The earlier in the diſeaſe that cold affuſion is employed, the more likely will it be to bring it to a favourable termination, ſhould it fail in arreſting its progreſs wholly.

Throughout the whole courſe of this malignant diſorder, the bowels ought to be kept open, by adminiſtering, as occaſion may require, the laxative of calomel, before recommended; but I do not think that mercury ſhould be given in ſufficient doſes to excite any degree of ſalivation, as has been practiſed in the yellow fever. Should further experience, however, ſanction this mode of proceeding, the proceſs will not interfere with the employment of tepid affuſion at the ſame time, although it might with that of the more powerful remedy.

As I am induced to ſuppoſe, that a high degree of delirium does not often attend on the fever in queſtion; and that the

patient is rather incommoded by muttering and ſlight wanderings, I do not heſitate to adviſe the giving a doſe of opium, proportioned to the age of the perſon, every evening at an early hour; which practice I generally adopt in all fevers of the typhoid claſs, and with very good effect.

Having pointed out the means which I think moſt likely to procure a favourable termination of the diſeaſe, I beg leave to add a few monitory cautions for ſuppreſſing its further propagation, and deſtroying its contagion. To anſwer the firſt of theſe intentions, it will be neceſſary to keep the mind cheerful, and as free from all apprehenſions and anxiety as poſſible; and carefully to avoid intemperance, ſenſuality, great fatigue, profuſe evacuations, a poor vapid diet, or whatever elſe may tend to produce debility. By ſtrengthening the bodies of men, it is ſuppoſed they will thereby be enabled to reſiſt contagion the better; I would, therefore, recommend cold bathing every morning, with two or three doſes daily of ſome tonic medicine; ſuch as the Peruvian bark. If wine is uſed at all, it ſhould be uſed ſparingly; the leſs perhaps the better.

Nurſes, and medical attendants, who are immediately expoſed to the contagion, ſhould be careful to come into immediate contact with the diſeaſed as ſeldom as poſſible; and they ought never to inhale the breath of the ſick, nor place themſelves in ſuch a direction, as that a ſtream of air can waft the miaſms or effluvia towards them. Poſſibly, it might be advantageous to anoint the hands with ſweet oil, as has been practiſed, it is ſaid, in the plague, with much advantage.

For the purpoſe of deſtroying the contagion, the ſick ſhould be removed to Lazarettos; and theſe muſt be guarded, ſo as to cut off all unneceſſary communications with thoſe in health. The atmoſphere ſurrounding the infected, ſhould be purified as much as poſſible, by a ſtrict attention to cleanlineſs, a free ven-

tilation, and frequent fumigations with the nitrous or muriatic acid, in the form of gas. All ſubſtances capable of being impregnated with the effluvia, and of vitiating the atmoſphere, ſhould be ſpeedily removed from the apartments of the ſick, to ſituations where the healthy cannot ſuffer by them, and where they will be made to undergo proper purification.

It does not ſignify which of the acids we employ, as they are both equally efficacious in deſtroying every ſpecies of contagion. If a preference be given to the muriatic, place a ſaucer, or any other earthen veſſel, containing about half a pound of common ſalt, in the apartment of the ſick, and pour over it, from time to time, a ſufficient quantity of vitriolic acid, to moiſten the whole of the ſalt. If the nitrous is preferred, put half an ounce of vitriolic acid into a cup, ſaucer, or glaſs, and add, from time to time, ſome nitre reduced to powder. In rooms from fifteen to twenty feet in dimenſions, one veſſel will be ſufficient; but in larger ones, two or more will be requiſite; and when the air is foul, and peculiarly offenſive, it will be adviſeable to apply a ſlight degree of heat under the veſſels, in order to extricate a larger quantity of vapour.

Europeans of a full plethoric habit of body, who may be obliged to go out to Gibraltar during the prevalence of this malignant fever, will act prudently in taking now and then, during the paſſage, ſome cooling laxative medicine; and in undergoing a ſlight mercurial courſe, ſo as to produce an alterative effect. The ſame plan was found to be a good preventive againſt any attack of the yellow fever.

July 13, 1805.

Med. and Phyſ. Jour.

Bishopp's *Caſe of Optical Illuſion from Hyſteria.*

A ſingle woman of delicate frame, aged 22, had been much afflicted with hyſteria more than three months. The paroxyſms of the diſeaſe were often violent, accompanied frequently, but not conſtantly, with temporary delirium: ſo that the diſeaſe appeared to be well marked, never being preceded by any local irritation, of which the patient was conſcious. During ſome of theſe attacks ſhe was occaſionally ſo much in poſſeſſion of the faculties of the mind and of ſpeech, as to be able to reply appoſitely to queſtions put to her by the attendants; but of theſe converſations ſhe retained no recollection whatever upon the termination of the paroxyſm. Certain paroxyſms were productive of convulſions ſo violent as to require coercion; while others were attended merely with mild delirium. In the latter, impreſſions made by ſurrounding objects upon the retina, were tranſmitted to the brain, as uſual inverted, and were repreſented to the mind in that poſition ſo forcibly, that the young woman could not reſiſt the impulſe ſhe felt to place the chairs in the room horizontally, leſt they ſhould fall, finding they would not ſtand on the other end. She expreſſed her ſurpriſe, and laughed heartily, on ſeeing the attendants all ſtanding, as ſhe thought, upon their heads. The illuſion immediately ſubſided with the fit, both laſting about an hour generally. This, therefore, was not a ſingular occurrence in one particular fit, but recurred repeatedly. The whole diſeaſe yielded, at length, under my care, to the ordinary treatment of hyſteria, no defect either in the organ of viſion, or in the faculties of the mind, remaining.

Med. and Phys. Jour.

WHITLAM, *on the Uſe of Conium Maculatum.*

As the greateſt diſſimilarity of opinion exiſts amongſt eminent profeſſional characters, reſpecting the curative powers of ſeveral active medical agents; it might be of conſiderable advantage to practitioners in general, were the cauſes of this difference of opinion ſucceſsfully inveſtigated.

I flatter myſelf, that with regard to ſome of the remedies above alluded to, my reſearches have not been altogether without effect. Having frequently experienced the moſt beneficial reſults from the uſe of conium maculatum in preternatural enlargements of various parts of the human body; and as this herb has been as much recommended by ſome, as decried by others of equal rank and reſpectability as phyſicians, I make choice of it as an example.

Conium is an herb which requires not the chemiſt's art. Its virtues are concentrated in the expreſſed juice of its leaves, or by an infuſion of the herb in boiling water. Thus prepared, it will be found capable of exerting all its energy; whether uſed internally, or externally applied. Whoever uſes it in either of theſe forms, will never afterwards be inclined to truſt to the extract of the plant; which is always diveſted of the volatile parts, on which its diſcutient property ſeems to depend. But the great ſource of error in regard to this vegetable, which has frequently deceived thoſe who preſcribed it, is the ignorance of the people employed to gather it. Thoſe unacquainted with its botanical characters, frequently get the chaerophyllum inſtead of the conium. This has been remarked by the ingenious tranſlator of the Edinburgh New Diſpenſatory. When this miſtake takes place, it ſufficiently accounts for the apparent

want of efficacy in the plant. Let thoſe therefore, who have deſpiſed this active remedy, only procure it genuine; let them uſe it in its ſimpleſt forms, and perſevere a few weeks in its uſe; and then, if they find it inefficacious, let them report it to the medical world.

The following caſe, in which it produced the moſt aſtoniſhing effects, will ſerve as an additional proof of its great powers.

W. P. a perſon between forty and fifty years of age, formerly of an extremely robuſt habit, capable of bearing the greateſt exceſſes and fatigues, had the venereal diſeaſe repeatedly. The ſymptoms were in general removed by draſtic remedies; principally of his own preſcribing. The laſt time, he caught the diſorder in the form of gonorrhœa virulenta. He took calomel mixed with ſome purgative pill. The diſcharge from the urethra ceaſed, and has not ſince returned. In June laſt, it being ſeveral months after he was apparently cured, his throat became ulcerated, and his ſkin was partially covered with venereal blotches. He applied to me, and the above named ſymptoms were removed by mild mercurial medicines and the decoction of the woods. One of his teſticles now began to ſwell; that enlargement was ſpeedily removed by the ordinary means. He then had pains ſimilar to thoſe cauſed by acute rheumatiſm; theſe alternated with ſoreneſs of the throat and blotches on the ſkin. In October, the diſeaſe ſeemed nearly taken away. In January, his teſticle began again to ſwell; and together with the ſpermatic cord, &c. it became more than four times its original ſize. The parts were extremely hard, and he had ſo much pain as to preclude the poſſibility of taking any repoſe, although opium was given in large doſes. An eminent ſurgeon was called in. Diſcutient topical remedies were uſed, and mercurials and anodynes given internally.

After a conſiderable time, no advantage was gained. Green hemlock was then with difficulty procured. A ſtrong fomentation was made with the roots. It was applied ſeveral times a day; and after each fomentation, a poultice made of bread-crumbs, water, and the young ſhoots of the herb. In leſs than a week he paſſed comfortable nights. The ſwelling began to abate. The remedy was uſed ſix weeks. At this time the parts ſeem in their natural ſtate, and no ſymptom of lues has appeared, unleſs we ſuppoſe the pain he has in his joints to ariſe from latent venereal virus. This may be the caſe; but if we judge from the ſymptoms, dolores artuum, muſculorum tractum ſequens; ſub motu praeſertim aucti; artus debiles, rigidi; it muſt be called rheumatiſm.

Med. and Phyſ. Jour.

Weston's *Caſe of Fatal Treatment of Tinea Capitis.*

Thomas Mann, aged eight years, who had long been afflicted with tinea capitis, which had obſtinately reſiſted all the common remedies, had on Saturday, Auguſt 3, the expreſſed juice of tobacco* applied over his head, by his father, who had been recommended to do ſo by a neighbour. The application was finiſhed at five minutes before two o'clock, P. M. and he almoſt immediately afterwards complained of giddineſs and loſs of ſight, ſo that his father ſmilingly ſaid, "the boy is drunk." He ſoon after became ſick, vomited frequently and in large quantity; he had alſo inclination to go to ſtool, but

* The dried tobacco leaf is wetted ſufficiently to damp it, it is then put between iron plates, and preſſed, by which means the juice is procured.

could not evacuate; his limbs tottered, his face was pale, and covered with a cold ſweat; his mother aſſiſted him up ſtairs to bed, into which he had no ſooner entered than he had an involuntary diſcharge of fæces. His countenance now appeared ſunk; his limbs were motionleſs excepting that now and then his legs were drawn towards his belly convulſively. He ſpoke but ſeldom; but when he did utter any thing, it was to complain of an extreme degree of thirſt and of violent pain in his bowels, which ſeemed diſtended with flatus. Still he vomited frequently, and the whole body was bedewed with a cold ſweat; he gradually became weaker, and at half paſt five o'clock he expired, which was three hours and a half after the application of the poiſon.

Dissection.

Head. The pericranium ſeparated more eaſily than uſual from the cranium, and ſome watery fluid was interpoſed between it and the ſkull. The membranes of the brain were healthy, except that there appeared to have been ſome ſlight effuſion of lymph between the tunica arachnoides and pia mater; but this did not ſeem to have happened lately. The ventricles did not contain more than their proper quantity of water. The pineal gland had an hydatid in it.

The viſcera of the abdomen were all in a natural ſtate, excepting the ſmall inteſtines, which appeared ſomewhat more loaded with blood than uſual; all the viſcera of the cheſt were perfectly ſound; the blood in the heart was principally in a fluid ſtate, but there was a coagulum in the right ventricle.

It appeared therefore by diſſection that this boy's death was not attributable to any organic defect, but was to be aſcribed

entirely to the operation of an active vegetable poiſon upon the nervous ſyſtem.

Several inſtances have been recorded of ſimilar effects being produced by the unguarded uſe of this ſubſtance as an injection, and ſuch caſes cannot be too generally known, or too frequently related, as a knowledge of theſe facts will ſerve to put medical men upon their guard in uſing a remedy, which, without proper attention, is likely to deſtroy the life it is intended it ſhould preſerve.

Med. and Phys. Jour.

Diagnoſis of Meaſles and Scarlatina.

Although the meaſles and ſcarlatina are now known to ariſe from different modes of contagion, yet ſo many authors have conſidered them as varieties of the ſame diſeaſe, that it may be allowable in this place to recapitulate their diagnoſtic characters.

1ſt. The efflorescence in ſcarlatina generally appears on the ſecond day of fever; in the meaſles it is ſeldom viſible till the fourth.

2dly. It is much more full and ſpreading in the former diſeaſe than the latter, and conſiſts of innumerable points and ſpecks under the cuticle, intermixed with minute papulæ, in ſome caſes forming continuous, irregular patches, in others coaleſcing into an uniform fluſh over a conſiderable extent of ſurface. In the meaſles the raſh is compoſed of circular dots

partly diſtinct, partly ſet in ſmall cluſters or patches, and a little elevated, ſo as to give the ſenſation of roughneſs when a finger is paſſed over them. Theſe patches are ſeldom confluent, but form a number of creſcents, or ſegments of circles, with large interveming portions of cuticle, which retain their uſual appearance. The colour of the raſh is alſo different in the two diſeaſes, being a vivid red in the ſcarlatina, like that of a boiled lobſter's ſhell; but in the meaſles a dark red, with nearly the hue of a raſberry.

3dly. During their febrile ſtage, the meaſles are diſtinguiſhed by an obſtinate harſh cough, forcing up, in repeated paroxyſms, a tough, acrimonious phlegm,—by an inflammation of the eyes and eye-lids, with great ſenſibility to light,—by an increaſed diſcharge from the lachrymal gland, ſneezing, &c. The ſcarlatina is frequently attended with a cough, alſo with redneſs of the eyes from an extenſion of the raſh to the tunica albuginea, circumſtances which render the diſtinction between this complaint and meaſles particularly difficult, if other ſymptoms be not clear and deciſive. On minute obſervation, however, it will be generally, perhaps always, found, that the cough in ſcarlatina is ſhort and irritating, without expectoration; that the redneſs of the eye is not attended with intolerance of light, that the ciliary glands are not affected; and that, although the eyes appear ſhining and watery, they never overflow.

4th. Moſt writers on the ſubject, in diſtinguiſhing ſcarlatina from meaſles, and other eruptive complaints, obſerve that there is a peculiar ſenſation of anxiety, depreſſion, and faintneſs, in all caſes of it which are attended with fever.

5th. When the raſh appears on the third or fourth day, being ſcattered, and of a dark ſhade of colour, as frequently happens in the two latter varieties of ſcarlatina, the diſeaſe may be

diſtinguiſhed from meaſles by the appearances inthe throat, by the rigidity of the muſcles of the neck, and other peculiar ſymptoms hereafter to be deſcribed.

WILLAN, *on Cutaneous Diſeaſes, Ord.* 3. *part* 1.

Preparation of the true Copal Varniſh.

Take two parts of gum-copal, reduced to a fine powder, and waſhed repeatedly in water to free it from the woody fibres; introduce it into a flaſk, and pour over it four parts of pure oil of roſemary; digeſt the mixture in a gentle heat for three days, or longer, after which add as much highly rectified ſpirit of wine as is deemed neceſſary, and ſuffer it to remain undiſturbed until the impurities ſubſide; then decant the varniſh.

Med. and Phys. Jour.

PROUST, *on the Properties of Potaſh.*

M. Prouſt ſays, that the ſulphate of copper and the nitrate, with a minimum of acid, verdigris, the native and artificial muriates, cendre blue, the carbonate, &c. all yield to potaſh both their acids and hydrites. Potaſh, tinged with hydrate of copper, throws down the hydrate on being mixed with water, and all the oxydo-alkaline ſolutions follow the ſame law. Slaked lime, ſhaken in a bottle with carbonate of copper and water, produces a fine cendre blue in about twelve hours; after which, as lime deprives potaſh of its carbonic acid entirely, and potaſh is one of the ſtrongeſt attractors of acids known, it is impoſſi-

ble that it ſhould not have the ſame power over an oxyde and that oxyde poſſeſſed of the weakeſt attraction of any.

Med. and Phys. Jour.

Naphtha Aceti.

Dr. Buchholz has improved the preparation of the naphtha aceti, in the following manner. Upon ſixteen ounces of well dried and powdered acetated lead, a mixture of ſix ounces of concentrated acid of brimſtone, and nine ounces of ſpirit of wine, is to be poured, and by a mild fire the quantity of nine or ten ounces liquid to be drawn over. If this liquid be mixed afterwards with the third part of lime-water, nearly ſix ounces of æther aceti will be gained. When proper care has been taken, that the liquid which is drawn over, does not contain any acetated lead, the æther may be uſed without any further preparation. Should this not be the caſe, the æther muſt again be rectified.

Med. and Phys. Jour.

An Account of a Fifteen Years Pregnancy, where the Child was contained in the Urinary Bladder; by Profeſſor Josephi, *of Roſtock.*

A Woman, 47 years of age, tall and well made, and in good health from her infancy, after having been once well delivered, became pregnant the ſecond time. A few weeks after conception ſhe had her menſes, and this continued, a few intervals excepted, till the ſeventeenth week of her pregnancy. During the firſt period ſhe complained much of ſickneſs, vomiting, and

ſometimes obſtruction of the body. At the uſual time ſhe felt the movement of the child very plainly. After the firſt half of the pregnancy was paſſed, ſhe became affected with violent colic, and moſt excruciating pains, during which ſhe was thrown upon a bed by a woman. Since this time ſhe conſtantly felt, on the right ſide, at the annulus abdominalis, a very diſagreeable ſenſation whenever the child moved, as well as during the period of its growth. Sometimes ſhe experienced ſpaſtic conſtrictions almoſt to her toes. In the courſe of the thirty-ſeventh week, towards evening, ſhe complained of violent pains, with ſhiverings, and a ſenſation as if the bowels were drawn downwards. The abdomen was much ſwelled, and the pains riſing to a moſt excruciating height, ended at laſt in a palſy of the right leg, which continued three weeks. After this time ſhe no longer felt the movement of the child, nor has ſhe ever been well. Her breaſts were filled with milk.

Towards the fifteenth month, a diſcharge of corrupted or putrid blood was obſerved from the genitals. A month after, her menſes again appeared, and laſted from this time during her life, yet not quite regularly. The general ſtate of her health occaſionally improved, and excepting frequent pains in her bowels, and a preſſure on the urinary bladder, ſhe felt herſelf tolerably well. In this ſtate ſhe remained nine years, when the direful cataſtrophe began. After having experienced ſeveral violent frights, ſhe had a ſevere fit of ſhivering and colic, which affected the whole body, and terminated in pains like thoſe of women in labour; theſe continued ſeveral hours; and the next morning the patient found herſelf affected with the ague, which laſted a quarter of a year. From this period ſhe ſuffered from a painful iſchuria, with violent ſpaſms in the abdomen, and ſeldom experienced even a few minutes eaſineſs. Being conſtantly under the neceſſity of making water, ſhe was obliged to reſt on her knees, or to be in a forward bent poſ-

ture; the quantity of urine was ſmall, reſembling a whitiſh purulent matter, and often mixed with pieces of a thick jelly.

After three years had elapſed, ſhe obſerved a hard body in her urethra; and at the expiration of a few months ſhe evacuated with the urine a greyiſh ſtone, of the ſize of a horſe bean, which gave her ſome relief. Conſulting with her phyſician, he adminiſtered various medicines; in conſequence of which, a bone, by appearance the tibia of a child, paſſed off with the urine, under violent agonies. A few days after another ſtone came off, and a piece of the bones of the head. In this manner ſhe brought away by degrees ninety-four ſtones of different ſize, the largeſt reſembling a bean; they were differently formed, but all of a white colour; likewiſe a number of bones of the head, ſome vertebræ, ſix teeth, part of the fibula, and twenty-one flat pieces of bone.

In about a year after, a bone ſtopped the mouth of the urethra, and cauſed almoſt inſupportable pain; her phyſician therefore reſolved to make an inciſion in the urethra, after which he extracted the lower jaw bone, and the patient obtained ſome relief. But all her ſufferings increaſing from time to time, ſhe went to Roſtock, and Profeſſor Joſephi was conſulted. All the phyſicians reſiding at this place were called in, and they agreed that the child was contained in the urinary bladder, and nothing but an operation could ſave the patient. It was, therefore, reſolved that by making an inciſion in the urethra and the neck of the bladder, the patient might be delivered.

By an exact examination, the abdomen was not at all diſtended, only cloſe above the bones of the pubis, and more toward the right ſide, the hard parts of the child were very plainly felt; and by preſſing this part the patient always experienced very ſenſible pains. The genitals were well formed, only excoriat-

ed by urine. The pelvis was well ſhaped, the vagina more contracted, and the uterus ſmall, empty, of its natural form, and drawn up very high. The bladder was much extended, and the hard parts it contained could be plainly felt. The urethra was likewiſe extended, and at the orifice ſwelled and tumid. The colour of the patient was pale and cachectic, and her ſufferings beyond deſcription. Always lying on her knees, ſhe never enjoyed more than a few minutes reſt or ſleep; her appetite was pretty good.

In order to afford the patient ſome relief, the external application of the volatile ointment with opium, and lenient warm cataplaſms, were ordered. Inwardly, the extract of henbane and the laudanum liquidum Sydenhami. With the aſſiſtance of a catheter the urine was drawn off with difficulty: alſo lenient glyſters were applied. Every trial to take away the different parts contained in the bladder with inſtruments was fruitleſs. The inſtrument always ſlipped off, and it was impoſſible to catch any of the parts; beſides, the application of the inſtrument always increaſed the ſpaſtic affections. No other reſource was left, but to make an inciſion, and to try by this mode to obtain the extraction of the parts.

It was thought adviſable to make the inciſion in the urethra and the neck of the bladder, but Profeſſor Joſephi preferred the inciſion above the os pubis. The operation was performed in the preſence of five phyſicians and ſeveral ſurgeons.

The patient was previouſly ordered to take an opening glyſter, and to drink freely of barley water. During the operation ſhe was placed horizontally upon beds on a table, the head a little elevated, the knees rather bent and diſtended, the operator ſtanding between them. A cloſed catheter was applied in the bladder. The inciſion was made above the arcus oſſis pubis, towards and through the linea alba, about three inches

long, one inch below the adheſion of the peritonæum; the knife was thrown in the bladder, ſo that the point of the inſtrument and the finger of the left hand entered together. The bladder was not as in the natural ſtate, membranous and thin, but thick, hard, and fleſhy. At the opening the urine paſſed out; the catheter was opened directly, and the inciſion in the bladder dilated about an inch long. The Doctor found the whole bladder entirely filled with hard and pointed pieces of bone, beſides a number of ſoft parts. The inciſion therefore was about an inch more dilated, and one hundred and twelve pieces of bone, partly entire, and partly corroded, were taken out; beſides, twenty pieces of ſtony concrements, ſome cartilages, part of the ſkull and face, and the bowels, of a dark blue colour, adhering to the omentum and meſenterium. The femoral bones were about three inches and a quarter long, other bones were covered with a calcareous concrement, and ſeveral of them adhered ſo firmly to the inner coat of the bladder, that they could not be taken away but by force. The inner ſurface of the bladder was rough, thick, uneven, ſpongy, and totally different from its natural texture. At the bottom of the bladder an opening was to be felt, and in putting the fingers through it touched the bowels of the patient.

During the operation the unfortunate woman remained very quiet, notwithſtanding violent ſpaſms in the abdomen commenced, during which the bladder was contracted, like the uterus in labour. The whole operation was performed in forty-two minutes, and ſcarcely four ounces of blood were loſt. The dreſſing conſiſted of ung. ſimplex ſpread upon lint, and a ſoft compreſſion faſtened with the T bandage; the wound of the integuments was contracted with ſtrips of adheſive plaſter.

After the operation the patient did pretty well; ſhe complained of no particular pain, and deſired to look at the different contents taken from her. She took ſome water-ſoup, and

gruel was ordered for her drink. In the afternoon ſhe complained of cold, and a painful ſenſation in the wound, more towards the right ſide; her pulſe was from 85 to 95, quick, and ſpaſtic, and the whole body covered with a cold perſpiration. A ſedative ointment was applied to the body, and a ſaline draught with the addition of opium preſcribed. The pain was diminiſhed, as well as the ſpaſms, and ſhe enjoyed ſome ſleep at intervals. Through the catheter ſome bloody urine went off. During the night ſhe ſlept about an hour, and on awaking, complained of colic and hiccup.

The next morning her pulſe was 90, and very thin; the hiccup ſometimes was ſo violent that ſhe was thrown upwards. The body was uniformly warm, the abdomen not painful nor hard. She perſpired a little; the urine went through the catheter, but the body was conſtipated, and different glyſters were applied without any effect. At noon ſhe complained of a preſſure at the ſcrobiculum cordis; the pulſe became very quick and ſmall, and ſhe vomited a good deal of ſlime. In the evening ſhe became very weak, was always ſlumbering, and ſometimes convulſed. An emulſion with camphor was preſcribed, and glyſters of valerian, &c.

On the third day, at five o'clock in the morning, the body became looſe with moſt fœtid dejections. Her face was entirely altered, and every ſymptom of approaching death appearing; ſhe expired the ſame morning at eight o'clock.

The next day the ſection was made. The abdomen was much diſtended and hard; the wound ſhewed a good appearance, and likewiſe the genitals; the omentum and meſenterium were without fat, and empty of blood, but no ſign of inflammation or gangrene. The liver was of an aſh colour with ſeveral ſpots. The veſicula fellis much extended with gall and ſtony concrements. There was no blood extravaſated, nor

any urine in the cavum abdominis, but about four ounces of a yellowiſh, thin, and bad-ſmelling matter was contained in the pelvis, towards the right ſide. The wound in the bladder was about two inches, and much diſtended. The whole bladder had a thin, ſpongy, and in many parts cartilaginous texture, with a great many ſpongy excreſcences; at the upper part a hole was found, about the ſize of a ſix-pence, hard and callous. Towards the right ſide a bag of three inches was obſerved, adhering to the bladder, and containing part of the bowels (inteſtina tenuia). By examining theſe parts minutely, another opening at the other ſide of the bladder was detected, about two inches and a half in diameter. Through this hole part of the bowels paſſed into the bladder; it connected with the peritoneum, which formed a ſeparate bag in the bladder, the ſurface of which was ſmooth and covered with a purulent matter. The uterus was quite natural, alſo the tuba and the ovarium on the left ſide; at the right the tube was wanting, only a remaining part adhered firmly to the bladder. The right ovarium was likewiſe deficient, only the veſſels of this part remaining. All the other parts of the abdomen were ſound, and in their natural ſtate. Profeſſor Joſephi draws this concluſion, that, at the beginning, the pregnancy had taken place in the right ovarium; that the pieces of jelly, which the patient evacuated with the urine, were the diſſolved ſoft parts of the fœtus; and that the ſtony concrements were formed from the diſſolved bones, according to chemical analyſis, and conſiſted entirely of phoſphat of lime.

Med. and Phys. Jour.

A new Theory of the Effects of Medicines.

Dr. Raſori, of Italy, having examined the modern theory, according to which all medical and dietetical ſubſtances poſſeſs

the power of ſtimulating or inciting the body, found this doctrine too narrowly limited, and that there are certain ſubſtances which are debilitating in a very high degree, without previouſly inciting the body in any particular manner. The Doctor calls theſe, *contra ſtimulantia directa*. This aſſertion he proves by his obſervations on the effects of the lauro-ceraſus. All the animals to whom a large doſe of the laurel water was given, became ſuddenly debilitated, nearly to death. By the application of ſtimulating medicines they were again reſtored. Theſe obſervations being made upon animals only, were neglected; but ſome time after, Dr. Borda, an eminent practitioner in Lombardy, preſcribed the water of lauroceraſus for his patients, and found the ſame experiments confirmed. Too ſtrong a doſe of the water brought on a ſtate of palſy, and the moſt volatile ſtimuli were required. Dr. Borda afterwards examined a great number of drugs, the whole ſtock of which he ranks under two claſſes, viz. Stimulantia and Contra-ſtimulantia. To this laſt claſs belong, beſides the lauroceraſus, the bitter almonds, nux vomica, digitalis purpurea, ſolanum nigrum and dulcamara, gratiola, ſcilla, antimonialia, the neutral ſalts, all the acids, and perhaps mercury.

Med. and Phys. Jour.

New Thermometer.

A new thermometer has been invented for regiſtering the higheſt and loweſt temperatures in the abſence of the obſerver, which is ſaid to be a more ſimple, as well as a leſs expenſive, inſtrument than Lix's (Quere? Six's) thermometer. It conſiſts in two thermometers, one mercurial, and the other of alcohol, having their ſtems horizontal. The former has for its index a piece of magnetical ſteel wire, and the latter a minute thread of glaſs, having its two ends formed into ſmall knobs by fuſion in the flame of a candle. The magnetical bit of wire lies in the vacant

ſpace of the mercurial thermometer, and is puſhed forward by the mercury whenever the temperature riſes and puſhes that fluid againſt it; but when the temperature falls, and the fluid retires, this index is left behind, and ſhews the *maximum*. The other index, or bit of glaſs, lies in the tube of the ſpirit-thermometer immerſed in the alcohol, and when the ſpirit retires by the depreſſion of temperature, the index is carried along with it in apparent contact with its interior ſurface; but on increaſe of temperature the ſpirit goes forward and leaves the index behind, which therefore ſhews the *minimum* of temperature ſince it was ſet. The ſteel index is eaſily brought to the mercury by applying a magnet on the outſide of the tube, and the other is properly placed at the end of the column of alcohol by inclining the whole inſtrument.

Med. and Phys. Jour.

Balſamic Vinegar.

The following is the method adopted in Paris of making balſamic and anti-putrid vinegar:—Take the beſt white-wine vinegar, a handful of lavender, leaves and flowers; the ſame quantity of ſage, leaves and flowers, hyſſop, thyme, balm, ſavory; a good handful of ſalt, and two heads of garlic; infuſe theſe in the vinegar a fortnight or three weeks; the longer the better; and then it is found to be an excellent remedy for wounds, for ſpaſms and ſuffocation. By rubbing the hands and temples with it, a perſon may go into foul air with great ſafety.

Med. and Phys. Jour.

Fumigation.

A correſpondent, in a letter to the Editors, obſerves, "A writer in the laſt Medical Review, under the article of Smyth

verſus Chaptal, makes the following unqualified aſſertion—'There is no evidence that any perſon had ever employed the mineral gaſes for deſtroying contagion in the apartments of the ſick, prior to the uſe of them by Dr. Smyth, at Wincheſter, in the year 1780.' How far this aſſertion may be correct, I ſhall leave to be determined by the following quotation from a book publiſhed, above ſixty years ago, by Gaubius.

"Vapor antiloimicus: ℞ Acet. vin. vulg. lbj: ſal. marin: nitri: ol. vitriol. vulg. aa. lbſs: aq. puræ. lbj. M.

"Immiſſa, in ollam fictilem vitreatam, repandam, ſuper pruinas repoſita, in limine domus aut *cubiculi* leniter evaporent.

Med. and Phys. Jour.

An account of a Fœtus found in the Abdomen of a Woman eighty-three Years of Age; by J. GRIVEL, *Accoucheur in the Hoſpital of Villeneuve at Dreſden, as communicated in the following Letter to* DR. PEARSON, *Leiceſter Square.**

"SIR,

"I take the liberty of addreſſing to you a few lines, to deſire you to accept the two drawings which I have ſent, done as faithfully as my poor talent in the art enables me. You muſt know that we are in no want of bodies at Dreſden, having, beſides thoſe of the hoſpital, all thoſe of murderers and ſuicides. We lately received the body of Maria Walther, born at Meiſſen, widow of a Pruſſian huſſar, who had attended in ſeveral campaigns in the capacity of a ſutler to Frederick II. King of Pruſſia's army. She has been kept in the Lazarus Hoſpital ſince 1794 through charity, on account of her great age only, being in perfect health, and having never complained

* From the Edinburgh Journal, No. 5.

of any pain in the belly. She talked of nothing but of the wars in her former days, and aſſiſted as a nurſe to the ſick in the Lazarus Hoſpital till within two hours of her death. On opening her body, the young ſurgeon who was employed was ſurpriſed to find a child in an indurated ſtate, and blended, as it were, with the inteſtines. It appeared as repreſented in the drawing, No. 1. A more diſtinct view appeared after waſhing the parts, and as repreſented in the drawing, No. 2. We conſider this as a moſt rare caſe, the woman being *eighty-three years of age*, as was proved by an extract of her baptiſm. I wiſhed much to have purchaſed for you the original; but I was unable, it being reſerved for the cabinet of the Elector. I have the honour of recommending myſelf to your protection, and of being your very humble ſervant.

J. GRIVEL.

"P. S. We have a girl *(une fille nine*)* now in the Hoſpital, who is much deformed, and far advanced in pregnancy. Her pelvis is not two inches, Engliſh, wide. We ſhall be obliged to perform the Cæſarian operation. This is the ſecond of this deſcription which we have had at the hoſpital within theſe eighteen months."

Dreſden, June 28, 1805.

"* *Nine* is not a claſſical word in the French language, in which the letter was written, but we underſtand it to be a cant term uſed in ſome hoſpitals on the Continent, for thoſe caſes of deformity in the female, in which parturition muſt be difficult, if not impoſſible.—*Edinburgh Editors*."

As this is a matter of ſome importance, we recommend a more particular enquiry into the true import of the word, in which we ſhall not fail to add our diligence. At preſent we only take the liberty to remark, that *naine* is a legitimate word in French, meaning only a female dwarf, and as it is applied according to the idiom of the language to both ſexes, cannot refer to parturition. It is poſſible, though not likely, that the uncertainty of manuſcript reading may have cauſed this doubt; but whether this is the caſe or not, moſt Engliſh readers will wiſh to be ſatisfied on the ſubject.—*Engliſh Editors*.

Remarks by Dr. Pearson.

"1. Although the above ſtatement by no means contains a relation of many particulars, which a well-informed perſon would deſire, and although, from the want of a more full account, it will be impoſſible to make many inferences, which otherwiſe could have been eſtabliſhed, there is no juſt reaſon to queſtion the fact that a fœtus was found in the abdomen as deſcribed.

"2. I have heard, within the laſt ſix months, of three ſimilar caſes, viz. one which fell under the obſervation of a very experienced phyſician of the firſt reputation in Glouceſterſhire. I have been favoured with a ſight of the drawings of this caſe, and I know it is deſtined for publication: it will, there is no doubt, be given very correctly, and will contain a minute hiſtory of all the particulars belonging to ſo extraordinary an occurrence. A ſecond inſtance of the ſame ſort fell under the obſervation of a phyſician at Glaſgow; and, as I was informed by a young phyſician, my pupil, in Edinburgh, it was ſo ſimilar to the Glouceſterſhire caſe, that, while I was relating it in a lecture the laſt winter, he ſuppoſed it was the ſame as that with which he was acquainted at Glaſgow. A third inſtance was communicated to me yeſterday at Woolwich by Dr. Rollo: it occurred in Ireland, of which an account had been ſeen a few days ago in a letter.

"3. Even if I had leiſure, I ſhould not be diſpoſed to make a number of remarks, and endeavour to explain the nature of theſe occurrences, there being ſo many profeſſional men better qualified. However, one queſtion I ſhall venture to propoſe, in order to obtain from others a ſatisfactory explanation. What are the powers or circumſtances which prevent the fœtus from undergoing the compoſitions and decompoſitions uſual

in the proceſs of putrefaction? Three different reaſons may be aſſigned.

"1. That the fœtus is in a dead ſtate; but the excluſion of air containing oxygen gas is the circumſtance which prevents putrefaction.

"2. That the fœtus is in a dead ſtate; but the agency of living ſurfaces in contact with it, counteracts the putrefactive proceſs.

"3. That the vitality of the fœtus is not extinguiſhed, although the mode of agency of the principle of life is different from what is uſual.

"The firſt ſuppoſition does not appear to me ſatisfactory, becauſe air certainly does permeate through every part of the animal economy; and it is common for dead animal matter to become putrid in many cavities to which air has not a more free acceſs than into the cavity of the abdomen. Alſo out of the animal body, we know that animal fluids, kept in glaſs veſſels quite full, and hermetically ſealed, afford new compoſitions by the play of chemical attraction.

"The ſecond ſuppoſition may, perhaps, be thought not altogether improbable, being ſupported by analogy. So the fluid in dropſies, and in many other diſeaſes, remains for months, and even years, in cavities, without alteration in its compoſition, ſeemingly owing to its being in contact with living matter. Generally, however, when lifeleſs animal matter is expoſed to living ſurfaces, and confined ſo as to be much excluded from the air, it is either abſorbed, or it excites the formation of pus, or it putrefies. The late Mr. Pierce Smith, my moſt ingenious pupil, wrote a paper, which was read at the Royal

Society about the year 1795, containing many experiments to ſhow, that when fleſh of various ſorts was inſerted into the cavities of wounds purpoſely inflicted, it was abſorbed, if in a certain quantity, and if the animal was in vigorous health; but if the quantity was too great, then purulent matter was formed, and, in ſome caſes, the fleſh introduced became putrid.

"The third ſuppoſition, viz. that vitality remains, appears moſt reaſonable, becauſe certain actions go on, which produce changes only known in living bodies; ſuch as the oſſification of a great part of the fœtus; the proceſs of induration; the thickening of parts, and perhaps adheſion, from the communication of new veſſels between the confined extraneous body, and the cavity in which it is contained."

We heartily agree with Dr. Pearſon in the probability of his correſpondent's caſe. By the queſtions propoſed, "what are the power or circumſtances which prevent the fœtus from undergoing the compoſitions and decompoſitions uſual in the proceſs of putrefaction? We apprehend our author means only to inquire what laws have hitherto been diſcovered in dead or living animal matter, which may account for the fœtus continuing ſo long within the cavity of the abdomen, without putrefaction?" We are quite as ready as he is to give up his firſt propoſition, though we ſhould have wiſhed to be informed further of the permeability of all the living parts of the animal economy to air in an elaſtic ſtate, if ſuch is the meaning of our author, and alſo of thoſe cavities in which it is common for dead animal matter to become putrid?

The ſecond propoſition, like many others, which are gradually becoming current without any recollection of the ſource from which we derive it, was long ſince taught by Mr. Hunter;

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nor do we find it contradicted by the experiments of Dr. Pearſon's ingenious pupil. That animal matter, when inſerted in ſections made through the integuments, and parts below, of living animals, ſhould be followed by ſuch conſequences, is perfectly analogous to all that is to be met with in Mr. Hunter's treatiſe on the blood and inflammation. That it ſhould be abſorbed, as extraneous, is a part of his doctrine of the abſorption of ſolid parts; that it ſhould ſtimulate under other circumſtances to ſuppuration, is only a part of what we there meet with, as the means of removing extraneous bodies. If in ſome inſtances putrefaction followed, this might eaſily be accounted for by the manner which the foreign fleſh was introduced, and the uncertainty whether it was inſtantly cloſed by the adheſive inflammation taking place in the living animal.

Dr. Pearſon's laſt ſuppoſition, though ſeemingly ſupported by ſomething like a climax, is to us unintelligible. Can the author mean, that a fœtus, which could not have remained in the abdomen according to the common laws of the human functions much leſs than forty years, ſtill retained its life? As to the actions alluded to, they ſeem perfectly analogous to what are obſerved under other circumſtances. For a time, part of the dead fœtus would be abſorbed by the veſſels of the mother in contact with it; and if this proceſs ceaſed, what was left might be incaſed, and its interſtitial ſubſtance filled with calculous matter, as we find happens to other extraneous bodies. The following paper ſhews that this proceſs may be carried ſo far as even to affect the living part in which this altered action is ſet up.

Med. and Phys. Jour.

CALDWELL's *remarkable Caſe of an Oſſified Fœtus and Uterus in a Woman ſixty Years of Age.**

This caſe was attended with a number of intereſting particulars. The ſubject had many ſymptoms of labour under which ſhe died. The following is the account of the diſſection.

"She died about eight next morning, after a night apparently eaſy, and ſleep frequently repeated. Her body being opened by Mr. School, jun. her inteſtines were, in ſome places, marked with black ſpots of incipient mortification, dilated with flatulency. Her liver was extremely ſmall, but not diſeaſed. The uterine tumour was large and irregular, with its ſmall end to the neck of the uterus. It was evidently a child oſſified, and connected with the uterus, the greater part of which was oſſified. The head, with the face well marked, and one arm coiled, but obviouſly perceptible, formed the larger end of the tumour felt above the pelvis; and the part opened by ſciſſars, and conſidered the head, during the attempts to deliver, was the trunk of the body, and lower extremities compreſſed. The whole tumour reſembled a deformed buſt, having the head, neck, and trunk. There was no unnatural adheſion of the uterus, by previous inflammation, to the ſurrounding parts of the pelvis or abdomen. The child and uterus, oſſified together, were ſent to Dr. Clarke, profeſſor of midwifery in Dublin."

Med. and Phys. Jour.

Of the Utility of dipping Surgical Inſtruments into Oil, previous to an Operation.

Dr. Fauſt, in conjunction with Dr. Hunold, of Caſſel, will ſpeedily publiſh a work, in which they will demonſtrate that,

From the Edinburgh Journal.

excepting the lancet employed in vaccination, all the inſtruments of ſurgery ought to be dipped into oil at the moment when they are going to be uſed; by which method the pain of the ſubject operated upon will always be diminiſhed. In the ſame work it is recommended to make all inſtruments of a blood-heat a little before the operation. Theſe two precautions have already been practiſed in certain caſes, and with certain inſtruments.

Med. and Phys. Jour.

Defour's *Caſe of Plica Polonica.*

In this diſeaſe the hairs of the head are ſo twiſted and interlaced with each other, that they cannot be ſeparated without tearing or breaking them aſunder, in which caſe they pour out a bloody fluid. The plica Polonica is almoſt unknown in France, but is ſo extremely prevalent in Poland, as to have obtained the above appellation. The Jews reſiding in that country are particularly ſubject to it. Among the cauſes principally operating to produce this cutaneous affection, is reckoned the ſlovenly and dirty manner in which theſe people live; they ſeldom comb their hair; they live in low and moiſt ſituations, and indulge to exceſs in the uſe of ſpirituous liquors. Another cauſe believed to be productive of this malady is the uſe of certain waters, which, whether employed in the way of drink, or under the form of baths, never fail to produce diſagreeable conſequences. To theſe cauſes muſt be ſuperadded, an hereditary taint tranſmitted from father to ſon, and which conſiſts in the too great relaxation of the pores and bulbs of the hairs, which are ſituated beneath the ſkin of the cranium. Thus it happens that a groſs juice or matter, generated by the uſe of coarſe or indigeſtible aliments, and of impure water, is pro-

pelled, by means of the heat excited in conſequence of the abuſe of ſpirituous liquors, into the cavities of the hairs, oozes through their pores, and occaſions this malady.

During the month of December, 1801, I was deſired to viſit Mad C—, reſiding in Vendome-ſtreet, (Paris) who laboured under this malady. This lady was of a ſanguine temperament, and of an irritable diſpoſition. During her youth, ſhe had ſuffered much from violent affections of the mind, and had been much addicted to the uſe of ſpirituous liquors. I ſaw her a few days after the diſeaſe manifeſted itſelf, and found her labouring under an acute inflammatory fever; her eyes appeared extremely red, remained half ſhut, and could ſcarcely tolerate the fainteſt light. On the fifteenth day from the commencement of the diſeaſe, I obſerved that the hairs ſtood erect, and were ſo intertwined, and glued together, that a night cap could not be kept on her head; and when the matted hairs were either cut, or broken, they poured out blood, eſpecially during the paroxyſms, or exacerbations of the fever, becauſe, at theſe periods, the patient was much more agitated, and more frequently moved her head.

During the firſt and ſecond ſtages of the diſeaſe, I preſcribed cooling, diluting, and demulcent medicines; and, in the third ſtadium, bitters combined with acids, and occaſionally gentle aperients were adminiſtered. At the ſame time, I employed externally, as a lotion, a decoction of comfrey roots, the leaves of brank-urſine, marſh-mallows, groundſel, and other emollients, with a view to favour the expulſion of the morbific matter by the hair, which appeared to be the outlet pointed out by Nature, as well as to prevent the reabſorption of the acrimonious and putrid humour into the ſyſtem, and thus prevent its repulſion upon any of the internal viſcera.

After a ſpace of three months, during which period much blood and pus were diſcharged, the complaint at laſt yielded without cutting out the hair, a practice reſorted to in Poland; and on the eighty-third day of the diſeaſe, to the aſtoniſhment of her friends, and phyſician, the hairy ſcalp entirely ſeparated, and was found lying looſe within her night-cap.

The patient long preſerved this integument of the cranium, which was extremely curious, not only on account of the ſize, or dilatation of the hairs, but from their matted form.

Since her recovery, a new crop of hair has made its appearance, and at the preſent period, 1806, is nearly as luxuriant as formerly.

Med. and Phys. Jour.

COLLINS, *on the Uſe of Tinctura Ferri Muriati in Retention of Urine.*

On July 12, I was ſent for and conſulted by a patient, attended by Dr. H. and Mr. L. of this town, labouring under excruciating pain from a retention of urine from ſtricture. I found him extremely irritable, pulſe 110, weak, tongue dry, bowels regular; and alſo that he had taken freely of the ext. cicutæ and opium, as well as having been in the hot bath; that the catheter could not be introduced, nor a bougie: and from the hiſtory of the caſe, the patient, a captain of a veſſel, living an irregular life, aged about ſixty, and afflicted with this complaint for above fifteen years; that he had taken much medicine, particularly antiſpaſmodics. The nature of the caſe did

not allow of much delay, nor did he ſeem likely to be relieved but by an operation, which I was unwilling to perform, as neither of the above gentlemen could be found. I therefore, at the earneſt entreaties of the patient that I would do ſomething for his relief, recollected a caſe Mr. Cline mentions in his lectures, wherein the tinct. ferri muriati produced unexpected relief. I immediately procured ſome, which I began giving gt. v. every ſix minutes, in a little wine and water. After the third and fourth doſe, the patient became quieter, and, in leſs than half an hour, ſome water paſſed without any pain. In one hour he had diſcharged above half a pint, and continued to do ſo for ſome time with great relief; the other medical gentlemen then arriving, a ſtrong doſe of opium was given, and he ſpent a tolerable night.

I did not ſee him again for two days, when, upon being ſent for, I found him reduced to the ſame deplorable ſtate as before, although he had taken very large quantities of the cicuta and opium. We then repeated the tincture, and in leſs than two hours the man was again relieved by a diſcharge of urine. The firſt time he took about ninety drops, altogether; the laſt time about one hundred and thirty.

Med. and Phys. Jour.

Remedy in Ophthalmia.

Mr. John Shawe, ſurgeon, at Liverpool, has communicated to us a very effectual remedy for that ſpecies of inflamed eye, commonly called Egyptian ophthalmia. The following is an extract from his letter. "We had ophthalmia very prevalent here laſt ſummer; I believe it was very general throughout the

country; the inflammation was unuſually great, and extremely obſtinate; the pain in the eyes almoſt inſupportable, and particularly in attempting to open them, apparently as if ſharp ſand, or ſome rough ſubſtance was pricking them; the tears felt very hot in trickling down the cheeks. Suddenly I became a ſufferer, and for the firſt time in my life I had ever felt the pain of inflamed eyes. From the general deſcription, it is one and the ſame called Egyptian ophthalmia. It occurred to me, that ſome mucilaginous body might relieve, by uniting with the tears and blunting their acrimony. Accordingly, I prepared ſome mucilage of quince ſeeds, and had it dropped into my eyes. The inſtant relief that followed this application exceeded my expectation, and far ſurpaſſed every means I had heard or tried before; the pricking ſenſation was eaſed almoſt inſtantly, and the eyes could be moved with freedom. This will ſuffice, without giving you the number, or any long hiſtory of others, who have received equal benefit. I have tried the mucilage of gum arabic and linſeed, but without any benefit. Whether any peculiar property may be in the acid of the quince ſeeds uniting with the tears, and correcting their alkaline action, I do not preſume to give my opinion, and ſhall leave that to the ſuperior judgment of your readers."

Med. and Phys. Jour.

An Account of a ſmall Lobe of the human proſtate Gland, which has not before been taken Notice of by Anatomiſts; by EVERARD HOME, *Eſq.* F. R. S.*

"The ſubject of the preſent paper is a portion of a gland, which from the obſcurity of its ſituation has hitherto eſcaped

* From the Philoſophical Tranſactions of London.

obſervation; and were it not for the change produced in it by diſeaſe, which enlarges it ſo much that it ſometimes completely ſhuts up the canal by which the urine ought to paſs, it would be little deſerving of attention; but when this important effect is conſidered, the part itſelf becomes an object of very ſerious intereſt.

"In ſtating the circumſtances which led to the preſent inveſtigation, it may be neceſſary to mention, that the proſtate gland is liable in the latter period of life to enlarge; and when it does ſo, there is frequently a nipple-like projection, which riſes up and forms tumours of very different ſizes in the cavity of the bladder. Theſe tumours, as they obſtruct the paſſage of the urine, have attracted the attention of all anatomical ſurgeons, from the time of Morgagni to the preſent day. Their appearance has been accurately deſcribed, and ſpecimens of them in different degrees of enlargement are preſerved in every collection of morbid parts. The attention of ſurgeons has been naturally called to what is of the greateſt conſideration,—the appearances they put on, and the ſymptoms they produce: but the particular circumſtances in the natural conformation of the gland, which diſpoſe it to form theſe tumours, have never been examined. Morgagni ſays, 'Theſe caruncles were found to grow out in the very middle of the upper and internal poſterior circumference of the gland; but whether theſe things happened by chance, or otherwiſe, future obſervations will ſhew.'*

"From theſe expreſſions, it is evident that Morgagni had no idea that there was any conformation of the proſtate gland

* "Si ea, quæ ex Sepulchreto exempla indicavimus, et id, quod ſupra ex Valſalva attulimus, et noſtra omnia attentè inſpicias, cuncta in ſenibus fuiſſe animadvertes; ita noſtra omnia, in quibus carunculæ initium fuit, hanc in medio ipſo poſteriori interni ſummique glandulæ ambitûs excreſcentem obtuliſſe; caſune hæc cuncta, an ſecùs, futuræ oſtendent obſervationes. Morgagni *de Sed. et Cauſ. Morb.* lib. iii. epiſt. 41, A. 19."

that could account for this tumour, and believed that it aroſe from the ſurface of the body of the gland.

" Mr. Hunter, in treating of the enlargement of the proſtate gland, ſays, ' From the ſituation of the gland, which is principally on the two ſides of the canal, and but little if at all on the fore part, as alſo very little on the poſterior ſide, when it ſwells it can only be laterally, whereby it preſſes the two ſides of the canal together, and at the ſame time ſtretches it from the anterior edge or ſide to the poſterior, ſo that the canal, inſtead of being round, is flattened into a narrow groove. Sometimes the gland ſwells more on one ſide than the other, which makes an obliquity in the canal paſſing through it.

" ' Beſides this effect of the lateral parts ſwelling, a ſmall portion of it, which lies behind the very beginning of the urethra, ſwells forward like a point, as it were, into the bladder, acting like a valve to the mouth of the urethra, which can be ſeen, even when the ſwelling is not conſiderable, by looking on the mouth of the urethra from the cavity of the bladder, in the dead body. It ſometimes increaſes ſo much, as to form a tumour projecting into the cavity of the bladder ſome inches.'*

" From the firſt paragraph it is evident that Mr. Hunter was unacquainted with this lobe; and in the ſecond we ſee that his knowledge of the diſeaſe led him to conclude, that, in the natural ſtate of the gland, there was a portion of it in this ſituation: but neither at that time, nor at any future period of his life, did he proſecute the inquiry.

" Although a great part of my time has been for many years occupied in attending patients labouring under complaints of the bladder and urethra, and my opportunities of

* " Hunter on the Venereal Diſeaſe, p. 169."

examining theſe parts after death have been very frequent, my attention has been always ſo much employed on the modes of emptying the bladder (an operation which, in many caſes, is attended with conſiderable difficulty), that it never occurred to me to inſtitute an inquiry for the purpoſe of attaining an accurate knowledge of the extent of the diſeaſe, until the month of December, 1805.

"At that time my attention was directed to this ſubject by the following circumſtances. In the examination of the proſtate gland of an elderly perſon, who had died in conſequence of this part having been diſeaſed, the nipple-like proceſs was found very prominent, and a bridle, nearly a quarter of an inch in breadth, extended from the middle line of the tumour to the bulb of the urethra, where it inſenſibly diſappeared. The uſual rounded projection of the *caput gallinaginis* was not viſible: it had waſted away, and the remains were concealed in the fold forming this bridle, which at that part was not thicker than at any other. The ſpace between the tumour in the bladder and the bulb of the urethra was unuſually ſhort, which is the reverſe of what is commonly met with in old men; ſo that this bridle appeared to have drawn the bulb towards the tumour, and ſhortened the membranous part of the canal.

"As this was an unuſual appearance, it led me to conſider it with attention, and to aſk if other anatomiſts had noticed it; which, as far as my inquiries have gone, has not been the caſe. The bridle had evidently been formed by the membrane of the bladder adhering firmly to that part of the proſtate gland compoſing the tumour, which it conſequently followed in its future increaſe, and drew up after it the membrane of the urethra. In this way the fold had in time become nearly a quarter of an inch broad, and was continued of the ſame breadth to the bulb, where, the lining of the urethra being more attach-

ed to the ſurrounding parts, it did not admit of being drawn up.

" This appearance of a bridle is more or leſs met with in all the caſes in which the nipple-formed proceſs occurs, but in ſo much ſmaller a degree, and not continued beyond the caput gallinaginis, that it never before led me to pay attention to it.

" To ſatisfy myſelf how this tumour was formed, it became neceſſary to examine the proſtate gland in its natural ſtate, and aſcertain whether there is any part ſufficiently detached to move independent of the reſt of the gland, and explain the appearances which had been met with in this particular caſe.

" My profeſſional avocations not affording time to make the diſſections requiſite for this purpoſe, Mr. Brodie, Demonſtrator of Anatomy to Mr. Wilſon, Teacher of Anatomy, in Windmill Street, whoſe knowledge of the ſubject fitted him for the taſk, and whoſe zeal for the improvement of his profeſſion made him willingly undertake it, gave me his aſſiſtance, and took the whole of that labour on himſelf.

" While diſſecting the parts for this purpoſe, the urinary bladder was diſtended with water, and the ſurfaces of the proſtate gland, veſiculæ ſeminales, and vaſa deferentia, were fairly expoſed. This being done, the vaſa deferentia and veſiculæ ſeminales were carefully diſſected off from the bladder, without removing any other part: theſe were turned down upon the body of the proſtate gland. An accurate diſſection was then made of the circumference of the two poſterior portions of the proſtate gland, and the ſpace between them was particularly examined. In doing this, a ſmall rounded ſubſtance was diſcovered, ſo much detached, that it ſeemed a diſtinct gland, and ſo nearly reſembling Cowper's glands in ſize and ſhape, as they

appeared in the ſame ſubject, in which they were unuſually large, that it appeared to be a gland of that kind. It could not, however, be ſatisfactorily ſeparated from the proſtate gland, nor could any diſtinct duct be found leading into the bladder.

" A ſimilar examination was made of this part in five different ſubjects. The appearance was not exactly the ſame in any two of them. In one there was no apparent glandular ſubſtance, but a maſs of condenſed cellular membrane: this, however, on being cut into, differed from the ſurrounding fat. In another there was a lobe blended laterally with the ſides of the proſtate gland. Theſe facts are mentioned in proof of its not being always of the ſame ſize, nor having exactly the ſame appearance: this is found alſo to be the caſe with Cowper's glands; they are ſometimes large and diſtinct; in other ſubjects are ſcarcely to be detected, and in others again are in all the intermediate ſtates. The moſt diſtinct and natural appearance of this part was in a healthy ſubject twenty-five years of age, of which the following is an account. On turning off the vaſa deferentia and veſiculæ ſeminales, exactly in the middle of the ſulcus, between the two poſterior portions of the proſtate gland, there was a rounded prominent body, the baſe of which adhered to the coats of the bladder. It was imbedded not only between the vaſa deferentia and the bladder, but alſo in ſome meaſure between the lateral portions of the proſtate gland and the bladder, ſince they were in part ſpread over it, ſo as to prevent its circumference from being ſeen, and they adhered ſo cloſely as to require diſſection to remove them, nor could this be done beyond a certain extent; after which the ſame ſubſtance was continued from the one to the other. This proved to be a lobe of the proſtate gland, the middle of which had a rounded form, united to the gland at the baſe next the bladder, but rendered a ſeparate lobe by two fiſſures on its oppoſite ſurface. Its ducts paſſed directly through the coats of the bladder, on which it lay, and opened immediately

behind the verumontanum. By means of this lobe a circular aperture is formed in the proſtate gland, which gives paſſage to the vaſa deferentia.

"The appearance of this lobe has been ſince examined in a ſubject twenty-four years of age, and it was found ſtill larger, and more diſtinct.

"Previous to this inveſtigation, it was not known to me that any diſtinct portion of the proſtate gland was ſituated between the vaſa deferentia and the bladder. Theſe ducts were conſidered to paſs in the ſulcus between its two poſterior portions, in cloſe contact with the body of the gland. This account correſponds alſo with the deſcription given by Winſlow and Haller: it is, however, now proved to be erroneous. It is not in my power to determine whether all the anatomiſts of the preſent day have fallen into this error in the ſame degree with myſelf: but none of them have pointed out this lobe; and, therefore, in whatever way they have deſcribed the vaſa deferentia to paſs into the bladder, they have neither anticipated nor thrown any light on the preſent inquiry.* Haller ſays, expreſsly, that 'the proſtrate gland has no lobular appearance,' and the anxiety which all anatomiſts have to improve their art would have led them to correct this error, had they diſcerned that it was one.

"This newly acquired anatomical fact, enables us very clearly to underſtand the nature of a diſeaſe, which it was not poſſible we could have a correct idea of when we were ignorant of the exiſtence of the part in which it takes place. It not only

* "Glandula, aut certe celluloſum compactum corpus, quod proſtata dicitur. P. 464. Fabrica obſcura eſt, et neque glandulæ ſimplicis ſimilis, cujus cavea eſſet aliqua, neque compoſitæ; neque enim in lobulos recte diſcedit. P. 465. *Elem. Phyſiologiæ Corporis Humani, Autore* Albert. Haller. Tom. VII."

explains the ſituation of the tumour, the want of connection with the body of the gland, and the narrowneſs of its baſe where that is met with, but it ſolves what has ever appeared to me the greateſt difficulty, how it ſhould protrude into the cavity of the bladder. This ariſes from the hard ſubſtance of the coats of the vaſa deferentia being in cloſe contact, and bound down upon this lobe, ſo that from its firſt enlargement it muſt immediately preſs up the inner membrane of the bladder which can make very little reſiſtance.

"This lobe of the proſtate gland, from its ſituation and connection with the vaſa deferentia, is liable to many cauſes of ſwelling, which the body of the gland itſelf is free from; for every irritation upon the ſeminal veſſels, or their orifices, may be communicated to it by continuity of parts: and aged men, from an ignorance of theſe facts, are too often, through imprudence, producing an excitement in thoſe veſſels which the parts are unable to ſupport; and when this is long continued, inflammation becomes the conſequence, which cannot take place to any degree without being communicated to this lobe, and producing an enlargement of it.

"Every violent effort which is made to empty the urinary bladder produces an unuſual preſſure againſt this lobe, by which it may be injured. There is alſo much reaſon for believing that the diſeaſed ſtate of the lateral parts of the gland, ſo very commonly met with in the latter period of life, has its origin in this particular lobe; ſince in moſt of the caſes of a diſeaſed ſtate of the gland, which have come under my obſervation after death, this lobe has been enlarged in a greater degree in proportion to its ſize than any other part; and in ſome inſtances the enlargement of it has been very great, while it appeared to be only beginning in the lateral portions.

" Difficulty in paſſing the urine is a ſymptom, which comes on very early in diſeaſes of the proſtate gland, and ariſes entirely from this lobe being increaſed in ſize, ſince any enlargement in the lateral portions of the gland widens the canal inſtead of diminiſhing it, and they do not require much force to ſeparate them; but the leaſt increaſe of this lobe tends to ſhut it up.

" The enlargement of this lobe produces an effect which is not generally known, and leads medical practitioners into an error reſpecting the nature of the complaint. The orifice of the urinary bladder, which is the loweſt part in the natural ſtate, is raiſed up in proportion to the increaſe of this lobe; ſo that none of the contents below that level can be expelled, although whatever is above it is allowed, with more or leſs difficulty, to paſs out. In this way the perſon never evacuates more than one half or one third of the urine contained in the bladder; but as the water which comes away paſſes in a ſtream, and the quantity voided in twenty-four hours is ſufficient, no ſuſpicion is entertained of the cauſe of the frequency and diſtreſs in paſſing it, and the ſymptoms are referred to an irritable ſtate of the coats of the bladder. It is only by drawing off the urine through a catheter that the diſeaſe in this lobe can be aſcertained; as in that way alone the quantity of urine which is retained can be determined. No examination *per anum* can give the ſurgeon any information on this ſubject, ſince the poſterior ſurface of the vaſa deferentia only is to be felt, if the finger ſhould reach ſo far: and yet it is in this way that practitioners in general pretend to judge of the greater or leſs degree of the diſeaſe, although that portion of the gland which forms the moſt important part of the complaint is wholly out of their reach.

" The leaſt projection of this lobe into the bladder ſtretches the internal membrane of that viſcus which paſſes over it, keeps

it in a ſtate of irritation, and makes it liable to be graſped by the action of the ſphincter muſcle in expelling the laſt drops of urine, ſo as to give the patient excruciating pain. When it is more enlarged, theſe ſymptoms go off.

"From theſe obſervations, it appears that this ſmall lobe of the proſtate gland, which has been overlooked, is, from the ſituation and the circumſtances in which it is placed, more liable to become diſeaſed than any other part of the gland, and produces ſymptoms of danger and diſtreſs peculiar to itſelf, which have been hitherto ſuppoſed to ariſe from the body of the gland becoming enlarged.

"To enter further into the effects of diſeaſe on this lobe would be improper on the preſent occaſion, but not to have noticed them at all would have been equally ſo, ſince the only importance that can be attached to the facts, which have been brought forward in this paper, ariſes from the light they throw on the diſeaſes of the proſtate gland."

Med. and Chir. Rev.

Poiſonous Impregnation of common Salt and of Muriatic Acid.—From the Manual of Health.

The minute criticiſm on the *Reſearches concerning Spring Water*, and the *Enquiry concerning conſtitutional Diſeaſes*, however juſt, appears to us a little out of place. We certainly agree with the author (if he be ſerious), that he has made out a ſtronger caſe with regard to the poiſonous impregnation of common ſalt by mercury, than Dr. L— of the contamination of water by *arſenic* and *lead*.* Common ſalt, he obſerves, is contaminated with quickſilver; a fact that was obſcurely noticed by Becher, Kircher, Glauber, Boyle, and other old chemiſts. Rouelle,

* See Med. and Chir. Rev. vol. xi, p. 64, and vol. xii, p. 11

a French chemiſt, announced it diſtinctly in the *Journal de Medicine;* and M. Prouſt of Madrid has placed the fact beyond a doubt. He perceived it firſt by the ſpots of amalgam left by ſalt upon ſilver. Examination of the muriatic acid of different countries diſcovered to him that it contains corroſive ſublimate: in ſome ſpecimens he found as much as two grains in the pound. It is a common practice with butlers to clean their plate with mercurial powders: thoſe who uſe ſuch plate muſt inevitably ſwallow ſome of the mercury. Here, then, is an hitherto unſuſpected ſource of *conſtitutional* diſeaſes.

Med. and Chir. Rev.

Obſervations on Hydrophobia.—From the Manual of Health.

"The only caſe upon record in which a cure appears to have been effected after hydrophobia (if really ſuch) had come on, occurred in America. The patient was ſaved, as the account ſtates, by moſt profuſe bleeding. The particulars muſt be well known to every one who has kept pace with the current of medical information. Some obſervations, which are certainly curious and promiſe to be uſeful, were made two years ago at Jena. Dr. G. G. Zinke took, after it was dead, from a mad dog, that had bitten other animals with a fatal effect, ſome of the ſaliva with a camel's hair bruſh, and the very ſame day inoculated another dog on both the fore-legs. The cuts were bound up, to prevent the animal from licking them. It was properly ſecured and fed. The belladonna, which has been recommended as a remedy in ſuch caſes, was adminiſtered. The animal continued lively, and had a good appetite for ſeven days: on the eighth it refuſed food, drooped, and crept into

the corner of its kennel. The tenth, complete madneſs broke out.

" A ſecond dog was inoculated in three places, but the ſaliva on the bruſh was diluted with a ſtrong ſolution of white arſenic in water. In two hours the bandages were removed, and the wounds were wetted with the arſenical ſolution. On the third day the animal appeared ſomewhat indiſpoſed, and the wounds were found with inflamed edges and covered with a ſcab, under which there was a little matter. No ſymptoms of hydrophobia followed.

" A cat was inoculated with ſaliva diluted by tincture of cantharides. Ointment of cantharides was twice rubbed upon the cuts. The eighth day this cat refuſed food, drooped, and crept from corner to corner. The ninth day, with flaming eyes and the tail drawn in, ſhe ran againſt the wall, biting at every thing that was thrown to her. She was now deſtroyed.

" A rabbit was inoculated with ſaliva mixed with a drop of volatile alkali. The wound, in four hours, was waſhed with this alkali, and covered with linen ſoaked in it. The eleventh day the animal became mad, after previous indiſpoſition.

" Another rabbit was inoculated with ſaliva from the mad dog, diluted with healthy ſaliva. In two hours the wounds were waſhed with ſtrong ſoaper's lye, and again in two hours more. No hydrophobia.

" A dog was inoculated with the ſaliva diluted with a little water in which phoſphorus had been rubbed. In ſix hours the wounds were bathed with the phoſphorus water. On the third day the wounds were ſcabbed over and inflamed. The

fifth day the dog was heavy and without appetite; but theſe appearances went off, and the hydrophobia did not enſue.

"A cock was inoculated with the ſaliva diluted by a little gaſtric liquor from a cat. In two hours the wounds were rubbed with a tooth-bruſh dipped in vinegar; and again, in another hour, with gaſtric liquor: and in four hours more, repeatedly, with tincture of cantharides, and ſuppuration was kept up with ſalve of cantharides; nevertheleſs, the fourteenth day, hydrophobia came on.

"In five caſes of the bite of a mad dog Dr. Zinke ſucceſsfully rubbed the wounds with a tooth-bruſh wetted with ſtrong ſoaper's lye, after which inciſions were made in them. The perſon bitten was then put into a warm bath, or, in caſes where this could not be had, he was waſhed all over with ſoaper's lye and ſoap ſuds. He was then put into a warm bed, and warm diluents adminiſtered. After the wounds had ceaſed to bleed, white arſenic, mixed up into a paſte as for application to a cancer, was laid upon every point of the wound. This occaſioned pain and ſwelling, but no farther injury.

"Phoſphorus diſſolved in ether was given internally.

"The application of arſenic, as recommended by Dr. Zinke, ſeems a real improvement in the treatment of theſe bites. Every medical man knows, or ought to know, that arſenic can be externally applied without detriment: and caſes may be quoted where the moſt ſevere methods hitherto recommended were unſucceſsfully practiſed ſoon after the accident. I have been informed that in the Eaſt Indies people are frequently bitten by mad dogs, and not unfrequently periſh, in ſpite of attempts at exciſion and irritation of the parts immediately afterwards."

Med. and Chir. Rev.

*On the Exciſion of Carious Joints.**

Mr. Park's Treatiſe on the Exciſion of Carious Joints, of which a re-publication is here made, was firſt publiſhed in the year 1782, under the form of a letter to Mr. Pott. In this little work, the author adviſes, under certain circumſtances of injury or diſeaſe, the entire removal of the extremities of all the bones which form the joints, with the whole, or as much as poſſible, of the capſular ligament; thereby obtaining a cure by means of callus, or by uniting the femur and tibia, when practiſed on the knee; and the humerus, radius, and ulna, when at the elbow, into one bone, without any moveable articulation. In this way, Mr. Park thought amputation of the whole limb might be avoided, and the patient be left, upon the whole, in a better ſituation afterwards, than where the latter operation is had recourſe to.

The practicability of ſuch an operation, with a probability of ſucceſs, was undoubtedly very queſtionable, eſpecially where the larger joints are concerned. The hazard of wounding the principal blood-veſſels; the great inflammation and large ſuppurations uſually conſequent on wounds of the articulations; the uncertainty of obtaining a firm callus; the loſs of the inſertions of the extenſor-muſcles; the doubt reſpecting the utility of the limb, provided a cure could be obtained; the uncertainty of removing the whole diſeaſe when caries gave riſe to the operation: and, when undertaken on account of ſcrophulous affections of the joints, the hazard of a return of the ſame diſeaſe: theſe were difficulties and objections calculated ſtrong-

* From a review of a work, entitled, "Caſes of the exciſion of carious joints. By H. Park, ſurgeon in the Liverpool hoſpital, and P. F. Moreau, de Bar-ſur-Ornan, M. D. de l'ecole de Paris. With obſervations by James Jeffray, M. D. profeſſor of anatomy and ſurgery in the college of Glaſgow."

ly to deter ſurgeons from ſuch an undertaking. Theſe difficulties, however, did not appear inſurmountable to Mr. Park. He firſt proved the practicability of the operation on the dead body, and then had recourſe to it on a patient admitted into the Liverpool Infirmary with a diſeaſed knee of ten years ſtanding. In this caſe he removed rather more than two inches of the femur, and more than an inch of the tibia, and of courſe the patella. An inciſion was made, beginning about two inches above the upper end of the patella, and continued downwards about as far below its lower extremity; another, croſſing this at right angles, immediately above the patella, the leg being in an extended ſtate, was made through the tendons of the extenſor muſcles down to the bone, and nearly half round the limb; the lower angles formed by theſe inciſions were raiſed ſo as to lay bare the capſular ligament; the patella was then taken out; the upper angles were raiſed ſo as fairly to denude the head of the femur, and to enable him to paſs a ſmall catlin acroſs the poſterior flat part of the bone immediately above the condyles, taking care to keep one of the flat ſides of the point of the inſtrument quite cloſe to the bone all the way. The catlin being withdrawn, an elaſtic ſpatula was introduced in its place, to guard the ſoft parts while the femur was ſawed through; which done, the head of the bone thus ſeparated was carefully diſſected out: the head of the tibia was then with eaſe turned out and ſawn off, and as much as poſſible of the capſular ligament diſſected away, leaving only the poſterior part covering the veſſels. The only artery that was divided in the operation was one on the anterior part of the knee, which ceaſed to bleed before the operation was concluded. The ſymptoms which ſucceeded to the operation were, as might have been expected, pretty ſevere, but were relieved by the uſual means. It was nearly eight months, however, before the wound, and the occaſional abſceſſes which formed around the part, had entirely healed. The patient recovered ſo much ſtrength, at laſt, as to have got a ſtrong and uſeful limb, free

from pain and ſwelling, and was able to return to his ſea-faring mode of life.

The utility and advantage of a ſimilar operation on the elbow joint, in preference to amputation, Mr. Park thinks is very obvious: yet he had not himſelf performed it. Mr. Alanſon, however, his colleague, met with a caſe which ſeemed to eſtabliſh its practicability. A woman was brought into the infirmary for an extenſive gangrene, occaſioned by a fall on the elbow joint. The joint was laid bare by the gangrene, and the capſular ligament deſtroyed. In a few weeks the olecranon exfoliated, as did likewiſe the inner tuberoſity of the humerus, with a ſcale about ſix inches long, one in breadth, and about as thick as a ſhilling, from the back part of that bone. The joint was ſoon filled by granulations, and healed over: a firm callus was obtained, and the patient was diſcharged with a ſtiff elbow, but with a hand as uſeful as in ordinary caſes of ſtiff joints.

In the year 1789, Mr. Park publiſhed, in the *London Medical Journal*, vol. xi, a ſecond caſe of exciſion of the knee joint, which, however, terminated as unfortunately as the other did favourably. The patient lived nearly four months after the operation, and then ſunk, from apparent exhauſtion, the wound never having healed. A brief account of a ſimilar operation by a neighbouring ſurgeon, about twenty years before, is given, and which is ſaid to have been attended with ſucceſs. Two caſes are likewiſe mentioned from Mr. Trye, of Glouceſter, who aſſiſted the late Mr. Juſtamond in removing the olecranon, and two inches of the ulna, in a man who had a diſeaſed elbow joint; in the other, the os humeri was ſeparated, by an accident, from its connexion with the bones of the fore-arm, and forced, denuded of its perioſteum, through the integuments. Two inches and a half of its length, including the condyles, were ſawn off. Both theſe caſes terminated ſucceſsfully.

In ſome ſubſequent obſervations of Mr. Park, which accompany the preſent edition, he complains that his work produced very little indeed of the effect it was intended to produce. "The oppoſition it met with," he obſerves, "and the failure of my ſecond operation, ſo totally defeated my views, that I have not yet learned that it has, hitherto, proved the means of ſaving a ſingle limb in the whole of the Britiſh dominions. In this ſtate of neglect, and, indeed, of oblivion, would my attempt, in all probability, for ever have remained, had not the late M. Moreau, an enterpriſing French ſurgeon, taken up the ſubject, and carried his experiments farther than I ever ventured to attempt. When Mr. Moreau's work fell into my hands, Dr. Jeffray was accidentally in Liverpool, where he firſt ſaw it, and thought the ſubject of ſufficient importance to induce him to take the trouble of tranſlating it for the benefit of his ſtudents. This tranſlation he has conſented to publiſh; and politely propoſed that an impreſſion of my pamphlet ſhould accompany it, in order that they who read Mr. Moreau's obſervations upon it, may, at the ſame time, ſee the work on which theſe remarks were made. To this propoſal I readily acceded, in hopes that more attention will be paid to the ſubject now than it has hitherto received."

Mr. Park takes occaſion here to ſpeak of the practice of ſawing off the protruded ends of bones in compound diſlocations, previous to the attempt at reduction; a practice that he laments is not ſo general as it ought to be. It has been the invariable practice, he ſays, at the Liverpool Infirmary, for more than thirty years, and, he believes he may ſay, attended with invariable ſucceſs.

The pamphlet of M. Moreau, alluded to above, and of which a tranſlation is here given, contains eight caſes of exciſion of joints; three of the elbow, one of the knee, two of the ankle, one of the tarſal, and one of the ſhoulder joint; all of which

terminated favourably, as did many others, M. Moreau ſays, on whom ſimilar operations were performed. The motion of the fore-arm upon the arm, as far at leaſt as to flexion and extenſion, have been in all the caſes preſerved, which he attributes to the care that was taken to preſerve the radial attachment of the biceps, and the ulnar attachment of the brachiæus internus, or of one of them.

M. Moreau's method of operating on the knee differs conſiderably from that of Mr. Park. Inſtead of the longitudinal inciſion along the front of the knee, M. Moreau made an inciſion on each ſide, between the vaſti and flexors of the leg. Theſe inciſions were begun about two inches above the condyles of the femur, and were carried down along the ſides of the joint, till they reached the tibia. They were then united, by a tranſverſe cut, which paſſed below the patella, penetrating to the bone. The flap thus formed, including the patella, was raiſed by diſſection, when the heads of the different bones became ſufficiently acceſſible to the ſaw.

Not the leaſt valuable part of the work are the ſubjoined obſervations of *Profeſſor* Jeffray, conſiſting of critical remarks, the reſult of his anatomical and phyſiological knowledge, upon the nature and ſteps of the different operations here ſpoken of, together with the deſcription of a new ſpecies of ſaw, calculated greatly to facilitate the removal of the diſeaſed portions of bone.

The chief difficulty in theſe operations is, to ſaw the bones without injuring the ſoft parts with the ſaw. The common ſaw, whatever its ſize, being ſtraight on its cutting edge, and on that account, acting in a direct line on every thing that comes in its way, is ill adapted for this operation, when the bones are ſunk deep among the fleſh, whatever care is taken to depreſs or draw this aſide, and however extenſive the wound. This cir-

cumſtance has had no ſmall ſhare in deterring ſurgeons in this country from attempting the operation. In order to overcome this difficulty, Dr. Jeffray thought it might be poſſible to conſtruct a flexible ſaw, with joints like the chain of a watch, ſo as to allow it to be drawn through behind a bone by a crooked needle, like a thread, and to cut the bone from behind forward, without injuring the ſoft parts. Such a ſaw was accordingly made, and has been annually uſed on the dead ſubject in the anatomy claſs at Glaſgow, ever ſince the year 1790, and has been occaſionally lent to ſurgeons, by whom it has been uſed in operations. The maker of it was Mr. Richards of London, who was aſſiſted in the making of it by his nephew, the preſent Mr. Richards of Brick Lane. A ſketch of ſuch a ſaw was publiſhed about the time by Dr. Aitken of Edinburgh. It appears admirably calculated to anſwer the purpoſe intended by it, and ſerves to do away a material part of the objection to the operations in queſtion.

One great advantage derivable from the flexible ſaw is, that the tranſverſe inciſion may be diſpenſed with; by which the attachments of the extenſor muſcles are preſerved, and conſequently, in ſome degree, the future motion of the limb, where the extremities of the bones are not united by callus. By making two longitudinal inciſions, one on each ſide, the chain ſaw can be entered on one ſide, and be conducted by the needle acroſs, and in contact with, the upper ſide of the bone, to the wound on the other; and from thence it can be brought back, under the bone, with equal ſafety and eaſe. Thus the cutting is diminiſhed, no flaps are made, and the wound has a chance of healing by the firſt intention.

The flexible ſaw, Dr. Jeffray ſays, has been likewiſe a good deal uſed in other caſes: ſuch as cutting off the carious or protruding ends of bones from ſtumps, in caſes of ſloughing after amputation;—removing angular pieces from bones, in com-

pound fractures;—cutting out pieces of bone, in caſes of necroſis;—and ſawing off the callous extremities of bones that would not unite after fracture; for all which purpoſes it appears to be particularly well adapted.

A great number of other valuable remarks are made reſpecting the means of avoiding the blood-veſſels and nerves, but which it would be difficult to abridge without injury. We have ſaid enough, we truſt, to excite the attention of ſurgeons to the work itſelf, which, we are perſuaded, will gratify them in the peruſal.

Med. and Phys. Jour.

Contagious Ophthalmia.

An ophthalmia has for ſome months paſt raged with great violence among the ſoldiers of ſeveral Britiſh regiments in this country, particularly the fifty-ſecond, and which reſembles entirely in its ſymptoms and conſequences the Ægyptian ophthalmia, which deprived ſo many of our brave countrymen of their ſight, during the late expedition to that part of the world. In a great number of inſtances, it has proved abſolutely incurable, and totally deſtroyed the ſight, by inducing a milk-like opacity of the cornea. The diſeaſe has ſpread through the greater number of the regiment, and attacked as well the wives and children of the ſoldiers; while other regiments, though in apparently ſimilar circumſtances with regard to ſituation and external cauſes, have wholly eſcaped the diſeaſe. This ſeems to ſhew that the diſorder really ſpreads by contagion. It has been ſuggeſted, however, with great probability, by Mr. Ware, the celebrated oculiſt, in an addreſs to the public on the ſubject,

in ſeveral of the daily newſpapers, that it is not by effluvia, or infection (in the common acceptation of the word), that the diſorder is communicated, but by the direct application of the matter ſecreted by the inflamed part, from the ſoldiers waſhing after one another, and by other means of communication. Hence he ſuggeſts a moſt important caution with regard to cleanlineſs, and the avoidance of all unneceſſary intercourſe between the ſick and the healthy.

Med. and Chir. Rev.

Caution reſpecting Oil of Turpentine.

An accident has lately occurred in this city, which ſtrongly ſuggeſts the neceſſity of extreme caution in the uſe of oil of turpentine, as a remedy for extenſive burns and ſcalds. A ſervant girl ſtanding near the fire with a child in her arms, her clothes, by the accidental falling of a ſpark, caught fire. She ran out of the room ſcreaming, and was met on the ſtairs by the father of the child, who firſt ſnatched the infant from her, and then uſed his beſt endeavours to extinguiſh the flames. This, however, he was not able to accompliſh, till both the ſervant and child were ſeverely and extenſively burned. Oil of turpentine was very liberally applied, and directed to be frequently repeated, by night as well as day. For this purpoſe, a young lady, a relative of the family, ſat up with the ſervant, and, while making the application, the oil of turpentine caught fire: the bed and linen, ſoaked as it were in the inflammable liquid, were inſtantly in one general blaze. So rapid was the combuſtion, that the poor ſervant girl, rendered helpleſs by the former injury, was burnt almoſt to a cinder, and her attendant at the ſame time ſo ſeverely ſcorched, as to have ſince, it is ſaid, fallen a victim to the unhappy accident. A ſubſtance ſo highly in-

flammable as oil of turpentine ought on no account to be applied by candle-light, or at leaſt not without the moſt extreme caution.

Med. and Chir. Rev.

Method of procuring Tannin and Gallic Acid, ſeparately, from Gall-nuts.

If galls be digeſted in pure alkohol, the gallic acid is taken up, with little or none of the tannin, and may then be obtained by evaporation and cryſtallization. The tannin, which is ſcarcely at all ſoluble in pure alkohol, may be procured by infuſion or decoction of the remaining galls in water, and evaporating to dryneſs.

Med. and Chir. Rev.

Of the Uncertainty of the Doſes of Medicines.

A boy labouring under epilepſy in one of the hoſpitals of this metropolis, is at preſent taking no leſs than eighteen grains daily of the *argentum nitratum* (lunar cauſtic), and without its producing any remarkable effect. Another patient, a female, attacked with hæmorrhage, under the care of a private practitioner, takes nine grains of the *ceruſſa acetata (ſaccharum ſaturni)* at a doſe, and that without occaſioning colic or any other bad ſymptom.

Theſe doſes appear, at firſt, enormous; and indeed ſcarcely credible, when we conſider that a quarter of a grain of the

former medicine, and half a grain of the latter, are the quantities uſually exhibited; and even in theſe doſes are often obſerved to produce ſuch powerful effects, as to oblige the practitioner to lay them aſide. This apparent anomaly can only, perhaps, be explained, by reference to the mode of exhibition, and the vehicle in which they are given. The argentum nitratum in the above caſe is given in ſolution, or rather in diffuſion, for the lunar cauſtic is difficultly and ſparingly ſoluble in water, and more or leſs ſo according to the degree of heat to which the ſalt is ſubjected in forming it into lunar cauſtic. It may be, therefore, that the quantity of the medicine really taken in this caſe is much leſs than is ſuſpected. And with regard to the ſaccharum ſaturni, this, it appears, is given in combination with the infuſion of roſes, acidulated with the ſulphuric acid. Here, probably, the aſtringent matter alters the qualities of the metallic ſalt, as has been before remarked with regard to mercurial ſalts, which are by this means rendered comparatively inert.

Med. and Chir. Rev.

Gardner, on the Effect of the Galvanic Fluid upon Vegetable Infuſions.

Mr. Gardner, of the City Diſpenſary, has, in the courſe of ſome Galvanic experiments, been led to try the effect of the Galvanic fluid upon vegetable infuſions. Turmeric with diſtilled water was firſt ſubmitted to trial; the circuit being made with iron wires, gas was given out from both, and the infuſion became gradually changed from a bright yellow to a deep brown, beginning at the upper part of the tube, both wires became black, probably from the oxygen evolved from the water. The

ſame quantity of the infuſion of litmus was then ſubjected to the Galvanic action; in a few minutes the blue tinge began to fade; the liquor became diaphanous, and at length exhibited a greeniſh colour, gas being given out from both wires, which were alſo turned black. From theſe experiments, he conceived an alkali had been formed during the operations; to prove the truth of the conjecture, he was enabled to reſtore the blue colour to the litmus, by means of dilute ſulphuric acid. He repeated the experiment ſeveral times with the ſame ſucceſs. Syrup of violets, diluted with an equal quantity of diſtilled water, and Galvanized with ſilver and iron wires, turned as perfectly green as it could have done on the addition of pure ammonia, potaſh, or ſoda.

Med. and Phys. Jour.

*Appearances on Diſſection of a Caſe of Diſeaſed Spleen.**

1. "The coats of the ſtomach were nearly three times thicker than uſual; its cavity reduced to about one-third of the cuſtomary ſize, the rugæ very diſtinct; the cardia and pylorus in a ſound ſtate; but a little above the ſphincter pylori there was a quantity, nearly an ounce, of cheeſe-like matter in a granulated form, adhering to the external coat of the ſtomach, but not conſtricting the paſſage into the duodenum; there were no traces of inflammation either on the inner or outer coat of the ſtomach.

2. "The omentum was greatly enlarged, and entirely covered with cheeſe-like matter in a granulated ſtate; conſiderable portions of its ſubſtance were thickened to a full inch in depth, and were altogether formed of the ſame caſeous material, which

* From the Edinburgh Medical and Surgical Journal. No. 8.

might be rubbed between the fingers into a paſte, but ſomewhat gritty to the touch. The omentum was depreſſed far below its uſual ſituation, and ſtrongly and extenſively adhered to the peritonæum and inteſtines.

3. "The ſpleen was one maſs of diſeaſe; half of its proper bulk appeared to be abſorbed or waſted, and the organization of the remaining part completely obliterated, and in a ſtate approaching towards ſolution; the peritonæal coat of its internal concave ſurface, was dilated into a very large cyſt, with blood-veſſels of an enormous ſize, ramifying on its inferior part, or fundus. The upper part of the cyſt ſtrongly adhered to the whole under ſurface of the ſtomach, and the lower part to the upper edge of the great arch of the colon. The diameter of the cyſt was full ſix inches, and it contained more than a pound and a half of dark, denſe, coagulated blood, ſeveral portions of which, nearly as large as a man's fiſt, floated in a brown coloured ſerum, of which there was better than a pint. We have already related that two pints of a ſimilar fluid had been drawn off, previous to death, and the capacity of the cyſt was ſuch as to admit of conſiderably more than four pints. The bottom and ſides of this bag were covered about an inch deep, with a black tenacious matter of the conſiſtence of congealed honey, and, when examined with the fingers, was found interſperſed with maſſes of the ſame caſeous ſubſtance, which covered the omentum. The great ſize of the cyſt preſſed the ſtomach high up, and cloſe to the diaphragm, and the arch of the colon was, from the ſame cauſe, thruſt down many inches below its natural ſituation, and was contracted in that part of its courſe to the ſize of a ſmall inteſtine. There was no communication from this cyſt with the liver, ſtomach, or inteſtines, and there was no fætor, and no pus in any of the diſeaſed viſcera.

4. "The liver was preſſed high up by the bulk of the cyſt, its lower edge being conſiderably within the margin of the thorax.

It was perfectly ſound and healthy in all its lobes, not a mark of diſeaſe appearing, either externally or internally. It was rather ſmaller than uſual in ſize, and the left lobe could not be ſaid to paſs into any part of the left hypochondriac region, owing probably to the magnitude of the cyſt. The lobulus ſpigelii was alſo in the moſt perfect ſtate, and the gall bladder was diſtended with bile, and of its proper colour.

5. "The inteſtines, with the exception of the arch of the colon, were nearly free from diſeaſe, but compreſſed into a very ſmall compaſs, and adhering to the omentum. The blood veſſels upon the arch of the colon were turgid, and part of the meſocolon was as much diſeaſed as the omentum, being thickly interſperſed with cheeſe-like matter in a granulated form. The arch of the colon was ſo reduced in bulk, and compreſſed, that when the body was opened, it projected like a chain of very ſmall bladders.

6. "The kidneys, uterus, and bladder, were in a ſound ſtate.

7. "The thoracic viſcera were alſo perfectly ſound."

Pneumatic Tinder-box.

The diſcovery of the inflammation of inflammable bodies by the ſudden and forcible compreſſion of air in tubes, mentioned in a former number of our Review, has ſuggeſted to an ingenious mechanic in France, the idea of applying it to an uſeful purpoſe in domeſtic œconomy; namely, for ſuperſeding the common tinder-box of flint and ſteel. He firſt endeavoured to

aſcertain the greateſt degree to which it is poſſible to reduce the capacity of the forcing pump and the quantity of air, compatible with the production of the deſired effect. After different trials, he found that he could inflame tinder in tubes or pumps of compreſſion, about one third of an inch in diameter, and ſix inches long. When a tube of theſe dimenſions was well bored, and the piſton fitted well, he ſeldom failed to ſet fire to the tinder by a ſingle ſtroke of the piſton. The author has, in conſequence, conſtructed for ſale portable compreſſing tubes, to which he gives the title of the *Pneumatic Tinder-box*, and which are preferable to thoſe of phoſphorus and the like, recently invented, as being leſs dangerous in the uſe.

Med. and Chir. Rev.

On the Compoſition of Bile.

Bile has been commonly conſidered as a ſort of animal ſoap, formed of oil and ſoda, holding in combination a conſiderable quantity of albumen or animal matter. From ſome late experiments of M. *Thenard* on the ſubject, it would ſeem that this idea is not ſtrictly accurate. Bile, by deſtructive diſtillation, leaves a reſiduum of one-eighth, a fifth part only of which reſiduum is ſoda, or one-fortieth of the original bile; a quantity by no means ſufficient to ſaponify the oil which is contained in this fluid.

M. *Thenard* found, that, when the oil and albumen are precipitated from bile (which may be done by acetite of lead having a ſlight exceſs of oxide), the remaining liquor by evaporation affords a peculiar ſubſtance, which has the property of diſſolving the oily part of bile, while it is not, like the ſoda which alſo diſſolves a portion of oil, affected in its ſolvent pow-

ers by acids. This peculiar matter found in bile, and which M. *Thenard* conſiders as of a ſaccharine nature, amounts to about a twentieth part of the whole in the bile of an ox, which was made the ſubject of experiment.

Med. and Chir. Rev.

Method of preſerving Water ſweet at Sea.

A Dutch chemiſt, M. *Stipriaan Luiſcius*, has propoſed the following ſimple method of preſerving water ſweet in caſks at ſea, and which, he ſays, is found to be perfectly ſucceſsful. To a caſk of water he adds an ounce of oil of vitriol, and afterwards an ounce and a half of white marble reduced to fine powder. As ſoon as the marble has been introduced, the caſk is cloſely ſtopped down. In a little while a crackling noiſe is heard within the veſſel, occaſioned by the diſengagement of carbonic acid gas; but the noiſe ſoon ceaſes, the water taking up the gas as it is formed in ſolution. Water thus treated gave no ſign of alteration after it had remained a conſiderable length of time in a cellar. The preſervative ingredients employed on this occaſion leave in the water merely an inconſiderable quantity of ſelenite, which renders it in all reſpects ſimilar to ſpring water ſaturated with this ſalt, and which, it is well known, is very little liable to become putrid on keeping.

Med and Chir. Rev.

Injections of the Nerves.

M. *Oſiander* has lately exhibited to the Univerſity of Gottingen, ſeveral preparations of the nerves injected with mercury.

It is already known, by the intereſting work of M. Reil, *De Structura Nervorum*, that the optic nerves, after a certain preparation, may be injected with mercury: that is to ſay, after the expulſion of the ſoftened contents of the ſmaller tubes *(canaliculi)* by means of a ſyringe of a particular conſtruction, mercury may be diſtributed throughout them, becauſe theſe *canaliculi* anaſtomoſe or communicate with each other, ſo that injection is neceſſary only by one orifice. During many years, M. Oſiander has practiſed ſuch injections in a manner peculiar to himſelf. He has ſhewn the optic nerves of oxen and calves, reſembling threads of ſilver interlaced, preſerved in ſpirits of wine. He remarked on this occaſion, that *Coiter*, of Nuremberg, in his work, now very ſcarce, entitled, "Externarum et "internarum principalium humani corporis partium tabulæ, "Norib, 1572, fol." had ſaid, p. 87, "Opticus nervus minimé "ut *Galenus* aliique ejus aſſeclæ voluerunt, ex ſolido corpore "coque perforato conſtat, verùm non aliter atque cæteri om-"nes nervi, ex multis nervoſis fibris ſive filamentis ſibi mutuo "membranarum beneficio connatis conflatus. Hoc in bovino "optico nervo luce clarius eſt: nam ſi medullarem fruſti cujuſ-"dam nervi optici humiditatem digitis expreſſeris, filamenta "nervoſa conſpicies. Idem atteſtatur *Euſtachius* in examine "oſſium, ubi ſic inquit: nervus viſorius veluti tenuiſſimum ma-"tronarum linteum, in innumeras rugas æquales et pari ſerie "diſtributas complicatus, tuniculaque illas ambiente coactus hac "eadem inciſa evolvi ſeſe permittebat, et in amplam membra-"nam totum explicari atque intendi."

Conſequently Coiter was acquainted with the ſtructure and texture of the optic nerves; and on this acquaintance is founded the poſſibility, queſtioned by many, of injecting theſe nerves with mercury. However, till now no attempt had been made to inject other nerves than the optic, eſpecially in union with various parts of the body, becauſe it was not underſtood by what means the nerves might be prepared for the reception of

the mercury. But M. Oſiander took advantage of an opportunity offered by nature herſelf to promote ſuch an undertaking. Some time ago, of twins which were born in the lying-in hoſpital, one died of a watery head. M. Oſiander, on examining the brain, found the ſofter ſubſtance extremely ſhrunk, but the cortical, on the contrary, extended by the water, with the fine pellicles of the brain; and preſenting that membranous ſubſtance which Dr. Gall is of opinion may be effected in any brain by art. This obſervation led him to conjecture that the marrowy ſubſtance of the nerves of this child might be equally ſhrunk and waſted in the nervous canals, ſo as to admit the progreſs of mercury. He tried, in conſequence, to inject ſeveral nerves of the body, and ſucceeded.

M. Oſiander ſhewed this preparation, unique in its kind, in which the *nervus phrenicus* of the left ſide, the *truncus communis pro nervo mediano, cubitali et cutaneo*, the *nervi cubitalis, cutaneus major, palmaris medianus* and the *rami digitales ex mediano*, were partially injected to the ends of the fingers with quickſilver. In the left foot, the *nervi lumbalis, cruralis, ſaphænus*, with many of their branches, were clearly ſhewn, without any varicous diſtenſion. M. Oſiander infers, that in this way, and after an experiment which has ſo fully ſucceeded, art may ſucceed hereafter in injecting with quickſilver the nerves of thoſe ſubjects which have been waſted by diſeaſe, till at length the nervous ſyſtem may be as completely exhibited and underſtood as the lymphatic now is. Certain effects which have been obſerved, give reaſon to conclude that ſimilar injections are equally poſſible in other ſubjects alſo.

Med. and Chir. Rev.

☞ *Important Information to Bookſellers.*

Dr. Spalding, of Portſmouth, New Hampſhire, complains that not a ſingle volume of this Journal, later than the 13th, is to be found in America, and aſcribes the circumſtance to ſome inattention on the part of our Publiſher. On inquiry we find, however, that the bad faith and the bad credit of the American bookſellers, are the cauſes why very few good books are exported from England to the United States. The merchants are not paid for one half they ſend, conſequently they ſeldom export any books for Amercia, except ſuch as they can purchaſe at the price of waſte paper. Our publiſher ſays he ſent quantities of this Journal to New York, with little or no return, for ſeveral years; and that he has not yet received from his Agents a tenth of the ſum due to him. The complaint of Dr. Spalding has frequently been made to us by other American Correſpondents, and we embrace this opportunity of explaining the origin of the evil, conceiving that it may be eaſily removed by the eſtabliſhment and ſupport of ſome Bookſelling Houſe in America, of unqueſtionable punctuality and credit.

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